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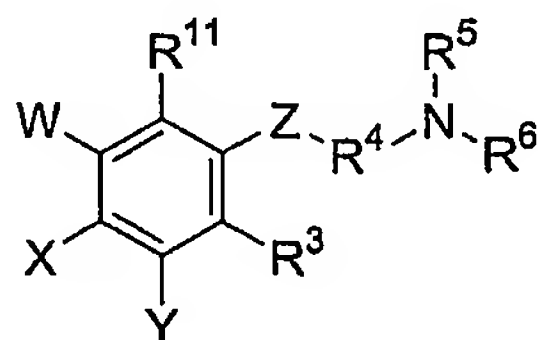
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(54) Title: MELANIN CONCENTRATING HORMONE RECEPTOR ANTAGONISTS



(I)

(57) Abstract: Novel compounds, or pharmaceutically-acceptable salts, tautomers or prodrugs thereof, of Formula (I) (I) wherein W, X, Y, Z, R<sup>3</sup>-R<sup>6</sup>, and R<sup>11</sup> are as defined in the specification, are provided. Also provided are methods of treating or preventing a melanin concentrating hormone-mediated disorder in a subject, comprising administering to a subject in need of such treatment or prevention a compound of Formula I.

MELANIN CONCENTRATING HORMONE RECEPTOR ANTAGONISTSBackground of the Invention

[0001] In 1999, 61% of adults, 13% of children aged 6 to 11 years and 14% of adolescents aged 12 to 19 years in the United States were overweight. Increases in occurrence of overweight and obesity has been seen in all age, racial and ethnic groups, and in both men and women.

[0002] Epidemiological studies show an increase in mortality associated with overweight and obesity. Individuals who are obese (body mass index ("BMI") > 30) have a 50-100% increased risk of premature death from all causes compared to individuals with a BMI in the range of 20 to 25. BMI is calculated according to the formula:

$$\text{BMI} = \frac{\text{Weight in pounds}}{(\text{Height in inches})^2} \times 703$$

[0003] An estimated 300,000 deaths a year in the United States may be attributable to obesity. Overweight and obesity are associated with an increased risk for coronary heart disease; type 2 diabetes; endometrial, colon, postmenopausal breast, and other cancers; and certain musculoskeletal disorders, such as knee osteoarthritis.

[0004] Both modest and large weight gains are associated with significantly increased risk of disease. For example, a weight gain of 11 to 18 pounds increases a person's risk of developing type 2 diabetes to twice that of individuals who have not gained weight, while those who gain 44 pounds or more have four times the risk of type 2 diabetes. A gain of approximately 10 to 20 pounds results in an increased risk of coronary heart disease (nonfatal myocardial infarction and death) of 1.25 times in women and 1.6 times in men. Higher levels of body weight gain of 22 pounds in men and 44 pounds in women result in an increased coronary heart disease risk of 1.75 and 2.65, respectively. In women with a BMI of 34 or greater, the risk of

developing endometrial cancer is increased by more than six times. Overweight and obesity are also known to exacerbate many chronic conditions such as hypertension and elevated cholesterol. Overweight and obese individuals also may suffer from social stigmatization, discrimination, and poor body image. Although obesity-associated morbidities occur most frequently in adults, important consequences of excess weight as well as antecedents of adult disease occur in overweight children and adolescents. Overweight children and adolescents are more likely to become overweight or obese adults; this concern is greatest among adolescents. Type 2 diabetes, high blood lipids, and hypertension as well as early maturation and orthopedic problems also occur with increased frequency in overweight youth. A common consequence of childhood overweight is psychosocial—specifically discrimination. See The Surgeon General's Call To Action To Prevent and Decrease Overweight and Obesity, U.S. Dept. of Health and Human Services, 2001. Thus, the need exists for methods of controlling weight and treating obesity.

[0005] Melanin-concentrating hormone (MCH) is a cyclic, 19-amino acid hypothalamic neuropeptide derived from a larger pro-hormone precursor of MCH, Pmch. Pmch-deficient mice are lean, hypophagic, and have an increased metabolic rate. Transgenic mice over-expressing Pmch are hyperphagic and develop mild obesity. Consequently, MCH has been implicated in the regulation of energy homeostasis, through actions on motor activity, metabolism, food intake and neuroendocrine function.

[0006] Two receptors have been identified in MCH, and are designated MCH 1 receptor and MCH 2 receptor. The MCH 1 and MCH 2 receptors are G protein-coupled receptors (GPCRs) believed to be responsible for the actions of MCH. G proteins are heterotrimeric proteins that control cellular responses to stimuli by cycling between a GTP-bound active state, which regulates the activity of a number of effector proteins, and a

GDP-bound inactive state. GPCRs accelerate activation of the G protein by increasing the GDP/GTP exchange rate..

[0007] MCH 1 receptor-deficient mice have normal body weights, yet are lean and have reduced fat mass. Surprisingly, MCH 1 receptor-deficient mice are hyperphagic when maintained on regular chow, and their leanness is a consequence of hyperactivity and altered metabolism. Consistent with the hyperactivity, MCH 1 receptor-deficient mice are less susceptible to diet-induced obesity. Importantly, chronic central infusions of MCH induce hyperphagia and mild obesity in wild-type mice, but not in MCH 1 receptor-deficient mice. Marsh et al., Proc. Nat. Acad. Sci., 99(5), 3241 (2002).

[0008] Because MCH has been shown to be an important regulator of food intake and energy balance, compounds capable of modulating the activity of MCH receptors, particularly MCH 1 receptors, are highly desirable for the treatment of eating disorders and metabolic disorders.

[0009] PCT Publication No. WO 02/04433 describes phenylcycloalkylmethylamino and phenylalkenylamino derivatives as modulators of MCH 1 receptors useful in the treatment of certain metabolic, feeding and sexual disorders.

[0010] U.S. Patent No. 6,472,394 describes the use of amide derivatives of 1,4-disubstituted piperidine as MCH antagonists for the treatment of obesity and diabetes.

#### Summary of the Invention

[0011] Among the several objects of certain embodiments of the present invention, therefore, may be noted the provision of melanin concentrating hormone receptor antagonists; the provision of pharmaceutical compositions comprising melanin concentrating hormone receptor antagonists; the provision of methods of treating, preventing, or otherwise ameliorating melanin concentrating hormone-mediated disorders in a subject; the provision of methods for treating, preventing or otherwise



ameliorating obesity in a subject; and the provision of methods of achieving sustained body weight loss in a subject.

[0012] Briefly therefore, the present invention is directed to a melanin concentrating hormone receptor antagonist of Formula I as defined herein.

[0013] The present invention is also directed to pharmaceutical compositions comprising a compound of Formula I, as defined herein, and a pharmaceutically acceptable carrier, adjuvant, or diluent.

[0014] The present invention is also directed to a method of inhibiting a GPCR, comprising contacting a compound of Formula I, as defined herein, with a GPCR, wherein the compound of Formula I is present at a concentration sufficient to inhibit the binding of a GPCR ligand *in vitro*. This method includes inhibiting a GPCR *in vivo*, e.g., in a subject given an amount of a compound of Formula I that would be sufficient to inhibit the binding of a ligand to the GPCR *in vitro*. Examples of GPCRs which may be inhibited according to the present invention include, but are not limited to the following GPCR families: Acetylcholine muscarinic, Adenosine, adrenergic, adrenergic, alpha-adrenergic, angiotensin, AR, Cannabinoid, DA, dopamine, His, imidazoline, Leukotriene, mACh, MCH, Opioid, serotonergic, serotonin, and Somatostatin.

[0015] Inhibition of the binding of a GPCR ligand to GPCRs is useful in the treatment of numerous disorders, including digestive tract disorders; mucolytic asthma; arrhythmia; ischemia; reperfusion injury; bronchospasm associated with asthma, emphysema and chronic bronchitis; acute and chronic respiratory diseases, including cystic fibrosis; cardiostimulant; chronic bronchitis; neurological depression; heart failure; benign prostate hypertrophy; diabetes; muscle spasm; myocardial infarction; stroke; Alzheimer's disease; anorexia; cachexia; multiple sclerosis; hyperprolactinemia; psychotropism; mydriasis in ocular examination and surgery;

deficitary and productive schizophrenia, psychasthenia and non-endogenous depression; kidney disease; vasodilation; chronic gastritis; glaucoma; depression; rhinitis, including allergic rhinitis; pain, including cancer pain, musculoskeletal pain, post-operative pain; eye disease; dyspepsia; cough; ulcer, including gastrointestinal, gastric and esophageal ulcers; helicobacter pylori prophylaxis infection; oesophagitis; allergies, including non-asthma allergies; cold; asthma; conjunctivitis; urticaria; diarrhea; Creutzfeldt-Jakob disease; dysmenorrhoea; drug addiction and drug overdose; septic shock treatment; cerebral ischaemia; drug poisoning; head trauma; inflammation; pruritus; tardive dyskinesia; emesis; anxiety; motility dysfunction; cluster headaches; hypertension; cancer; irritable bowel syndrome; hemotherapy-induced nausea and vomiting; thrombosis; dementia; opiate-induced nausea and vomiting; bipolar depression; migraine; sleep disorders; traumatic shock; gastritis; gastro-oesophageal reflux; psychosis; Parkinson disease; Dependence treatment; Pre-eclampsia; Raynaud's disease; Vasospasm; haemostasis; nausea and vomiting; spasms; post-operative nausea and vomiting; alcoholism, alcohol addiction; bulimia; nicotine addiction; obsessive-compulsive disorder; panic disorder; post-traumatic stress disorder; premenstrual syndrome; and dermatitis, including allergic dermatitis.

[0016] The present invention is also directed to methods of inhibiting the binding of MCH to MCH receptors comprising contacting a compound of Formula I with cells expressing MCH receptors, wherein the compound is present at a concentration sufficient to inhibit MCH binding to MCH receptors *in vitro*. This method includes inhibiting the binding of MCH to MCH receptors *in vivo*, e.g., in a subject given an amount of a compound of Formula I that would be sufficient to inhibit the binding of MCH to the MCH receptors *in vitro*. The amount of a compound of Formula I that would be sufficient to inhibit the

binding of MCH to the MCH receptor *in vitro* may be readily determined via a MCH receptor binding assay, such as the assay described hereinbelow in Example 24.

[0017] The present invention is also directed to methods for altering the signal-transducing activity of MCH receptors, particularly the MCH receptor-mediated release of intracellular calcium, said method comprising exposing cells expressing such receptors to an effective amount of a compound of the invention. This method includes altering the signal-transducing activity of MCH receptors *in vivo*, e.g., in a subject given an amount of a compound of Formula I that would be sufficient to alter the signal-transducing activity of MCH receptors *in vitro*. The amount of a compound that would be sufficient to alter the signal-transducing activity of MCH receptors may be determined via a MCH receptor signal transduction assay, such as the calcium mobilization assay described hereinbelow in Example 23.

[0018] The present invention is also directed to methods of using compounds of Formula I and appropriately labeled derivatives thereof as standards and reagents in determining the ability of a potential pharmaceutical to bind to MCH receptor.

[0019] The present invention is also directed to methods of treating, preventing, or otherwise ameliorating melanin concentrating hormone-mediated disorders in a subject, the method comprising administering a compound of Formula I or a pharmaceutical composition comprising a compound of Formula I and a pharmaceutically-acceptable carrier, adjuvant, or diluent to said subject.

[0020] The present invention is also directed to methods of treating or preventing obesity in a subject, the method comprising administering a compound of Formula I or a pharmaceutical composition comprising a compound of Formula I and a pharmaceutically-acceptable carrier, adjuvant, or diluent to said subject.

[0021] The present invention is also directed to methods of treating or preventing conditions such as feeding disorders, including obesity, bulimia and bulimia nervosa; sexual or reproductive disorders; depression and anxiety; epileptic seizure; hypertension; cerebral hemorrhage; congestive heart failure; sleep disturbances; or any condition in which antagonism of an MCH receptor is beneficial.

[0022] The present invention is also directed to methods of treating eating disorders, particularly obesity and bulimia nervosa, comprising administering to a subject in need of such treatment a compound of Formula I in combination with leptin, a leptin receptor agonist, or a melanocortin receptor 4 (MC4) agonist.

[0023] The present invention is also directed to methods of using compounds of Formula I as positive controls in assays for activity of GPCRs, particularly MCH.

[0024] The present invention is also directed to methods of using appropriately labeled compounds of Formula I as probes for the localization of GPCRs, particularly MCH, in tissue sections.

[0025] Other objects and features will be in part apparent and in part pointed out hereinafter.

#### Abbreviations and Definitions

[0026] The term "alkyl", where used alone or within other terms such as "haloalkyl", "alkylsulfonyl", "alkoxyalkyl" and "hydroxyalkyl", is a linear or branched radical having one to about twenty carbon atoms or, preferably, one to about twelve carbon atoms. More preferred alkyl radicals are "lower alkyl" radicals having one to about ten carbon atoms. Most preferred are lower alkyl radicals having one to about six carbon atoms. Examples of such radicals include methyl, ethyl, propyl (e.g., n-propyl and isopropyl), butyl (e.g., n-butyl, isobutyl, sec-butyl, and tert-butyl), pentyl (e.g., n-pentyl and iso-amyl), hexyl, and the like.

[0027] The term "cycloalkyl" is a saturated carbocyclic radical having three to twelve carbon atoms. The cycloalkyl radical may be mono-, bi-, or tricyclic. More preferred cycloalkyl radicals are "lower cycloalkyl" radicals having three to about eight carbon atoms. Examples of such radicals include cyclopropyl, cyclobutyl, cyclopentyl, and cyclohexyl.

[0028] The term "alkenyl" is a linear or branched radical having at least one carbon-carbon double bond and having two to about twenty carbon atoms or, preferably, two to about twelve carbon atoms. More preferred alkyl radicals are "lower alkenyl" radicals having two to about six carbon atoms. Examples of alkenyl radicals include ethenyl, propenyl, allyl, butenyl and 4-methylbutenyl. The terms "alkenyl" and "lower alkenyl" also are radicals having "cis" and "trans" orientations, or alternatively, "E" and "Z" orientations.

[0029] The term "cycloalkenyl" is a partially unsaturated carbocyclic radical having three to twelve carbon atoms. The cycloalkenyl radicals may be mono-, bi-, or tricyclic. More preferred cycloalkenyl radicals are "lower cycloalkenyl" radicals having four to about eight carbon atoms. Examples of such radicals include cyclobutenyl, cyclopentenyl, cyclopentadienyl, and cyclohexenyl.

[0030] The term "alkynyl" is a linear or branched radical having at least one carbon-carbon triple bond and having two to about twenty carbon atoms or, preferably, two to about twelve carbon atoms. More preferred alkynyl radicals are "lower alkynyl" radicals having two to about ten carbon atoms. Most preferred are lower alkynyl radicals having two to about six carbon atoms. Examples of such radicals include propargyl, butynyl, and the like.

[0031] The terms "carboxy" or "carboxyl", whether used alone or with other terms, such as "carboxyalkyl", is  $\text{-CO}_2\text{H}$ .

[0032] The term "carboxyalkyl" is an alkyl radical as defined above substituted with a carboxy radical. More preferred



are "lower carboxyalkyl" radicals, which are lower alkyl radicals as defined above substituted with a carboxy radical, and may be additionally substituted on the alkyl radical with halo. Examples of such lower carboxyalkyl radicals include carboxymethyl, carboxyethyl and carboxypropyl.

[0033] The term "halo" is a halogen such as fluorine, chlorine, bromine or iodine.

[0034] The term "haloalkyl" is an alkyl radical as defined above wherein any one or more of the carbon atoms is substituted with halo as defined above. Specifically included are monohaloalkyl, dihaloalkyl and polyhaloalkyl radicals. A monohaloalkyl radical, for one example, may have either an iodo, bromo, chloro or fluoro atom within the radical. Dihalo and polyhaloalkyl radicals may have two or more of the same halo atoms or a combination of different halo radicals. More preferred haloalkyl radicals are "lower haloalkyl" having one to six carbon atoms. Examples of lower haloalkyl radicals include fluoromethyl, difluoromethyl, trifluoromethyl, chloromethyl, dichloromethyl, trichloromethyl, trichloromethyl, pentafluoroethyl, heptafluoropropyl, difluorochloromethyl, dichlorofluoromethyl, difluoroethyl, difluoropropyl, dichloroethyl and dichloropropyl.

[0035] The terms "alkoxy" and "alkyloxy" are linear or branched oxy-containing radicals each having alkyl portions of one to about ten carbon atoms. More preferred alkoxy radicals are "lower alkoxy" radicals having one to six carbon atoms. Examples of such radicals include methoxy, ethoxy, propoxy, butoxy and tert-butoxy. The "alkoxy" radicals may be further substituted with one or more halo atoms, such as fluoro, chloro or bromo, to provide haloalkoxy radicals. More preferred haloalkoxy radicals are "lower haloalkoxy" radicals having one to six carbon atoms and one or more halo radicals. Examples of such radicals include fluoromethoxy, chloromethoxy,

trifluoromethoxy, trifluoroethoxy, fluoroethoxy and fluoropropoxy.

[0036] The term "alkoxyalkyl" is an alkyl radical having one or more alkoxy radicals attached to the alkyl radical, that is, to form monoalkoxyalkyl and polyalkoxyalkyl radicals. More preferred alkoxyalkyl radicals are "lower alkoxyalkyl" radicals having two to twelve carbon atoms. Examples of such radicals include methoxymethyl, methoxyethyl, methoxypropyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, dimethoxymethyl, dimethoxyethyl, methoxy(ethoxy)ethyl, dimethoxypropyl, and methoxy(ethoxy)propyl.

[0037] The term "alkoxycarbonyl" is a radical containing an alkoxy radical, as defined above, attached via an oxygen atom to a carbonyl radical, i.e., an ester radical. More preferred are "lower alkoxycarbonyl" radicals with alkyl portions having one to six carbons. Examples of such lower alkoxycarbonyl radicals include substituted or unsubstituted methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl and hexyloxycarbonyl.

[0038] The term "hydroxyalkyl" is a linear or branched alkyl radical having one to about ten carbon atoms, any one of which may be substituted with one or more hydroxyl radicals. More preferred hydroxyalkyl radicals are "lower hydroxyalkyl" radicals having one to six carbon atoms and one or more hydroxyl radicals. Examples of such radicals include hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl and hydroxyhexyl.

[0039] The term "alkylamino" is an amino group that has been substituted with one or two alkyl radicals. Preferred are "lower N-alkylamino" radicals having alkyl portions having one to six carbon atoms. Suitable lower alkylamino may be mono- or dialkylamino, such as N-methylamino, N-ethylamino, N,N-dimethylamino, N,N-diethylamino or the like.

[0040] The term "alkylaminoalkyl" is a radical having one or more alkyl radicals attached to the nitrogen atom of an aminoalkyl radical.

[0041] The term "alkylaminocarbonyl" is an aminocarbonyl group that has been substituted with one or two alkyl radicals on the amino nitrogen atom. Preferred are "N-alkylaminocarbonyl" "N,N-dialkylaminocarbonyl" radicals. More preferred are "lower N-alkylaminocarbonyl" and "lower N,N-dialkylaminocarbonyl" radicals with lower alkyl portions as defined above.

[0042] The term "alkylthio" is a radical containing an alkyl radical of one to about ten carbon atoms attached to a divalent sulfur atom. More preferred alkylthio radicals are "lower alkylthio" radicals having alkyl radicals of one to six carbon atoms. Examples of such lower alkylthio radicals are methylthio, ethylthio, propylthio, butylthio and hexylthio.

[0043] The term "alkylthioalkyl" is a radical containing an alkylthio radical attached through the divalent sulfur atom to an alkyl radical of one to about ten carbon atoms. More preferred alkylthioalkyl radicals are "lower alkylthioalkyl" radicals having alkyl radicals of one to six carbon atoms. Examples of such lower alkylthioalkyl radicals include methylthiomethyl, methylthioethyl, ethylthioethyl, and ethylthiopropyl.

[0044] The term "alkylsulfinyl" is a radical containing a linear or branched alkyl radical, of one to ten carbon atoms, attached to a divalent  $-S(=O)-$  radical. More preferred alkylsulfinyl radicals are "lower alkylsulfinyl" radicals having alkyl radicals of one to six carbon atoms. Examples of such lower alkylsulfinyl radicals include methylsulfinyl, ethylsulfinyl, butylsulfinyl and hexylsulfinyl.

[0045] The term "aminoalkyl" is an alkyl radical substituted with one or more amino radicals. More preferred are "lower aminoalkyl" radicals of one to six carbon atoms. Examples of such radicals include aminomethyl, aminoethyl, and the like.

[0046] The term "aminocarbonyl" is an amide group of the formula  $-C(=O)NH_2$ .

[0047] The term "carbonyl", whether used alone or with other terms, such as "alkoxycarbonyl", is  $-(C=O)-$ .

[0048] The term "aryl", alone or in combination, is a carbocyclic aromatic system containing one, two or three rings wherein such rings may be attached together in a pendent manner or may be fused, and wherein at least one of the rings is aromatic. The term "aryl" includes aromatic radicals such as phenyl, naphthyl, tetrahydronaphthyl, indane and biphenyl. Aryl moieties may also be substituted at a substitutable position with one or more substituents selected independently from alkyl, alkoxyalkyl, alkylaminoalkyl, carboxyalkyl, alkoxycarbonylalkyl, aminocarbonylalkyl, alkoxy, aralkoxy, hydroxyl, amino, halo, nitro, alkylamino, acyl, cyano, carboxy, aminocarbonyl, alkoxycarbonyl and aralkoxycarbonyl.

[0049] The terms "heterocyclyl" and "heterocyclo" are saturated or partially unsaturated heteroatom-containing ring-shaped radicals having one, two, or three rings wherein such rings may be attached together in a pendent manner or may be fused, where the heteroatoms may be selected from nitrogen, sulfur and oxygen. Examples of saturated heterocyclyl and heterocyclo radicals include saturated 3- to 6-membered heteromonocyclic radicals containing one to four nitrogen atoms (e.g., pyrrolidinyl, imidazolidinyl, piperidino, piperazinyl, etc.); saturated 3- to 6-membered heteromonocyclic group containing one to two oxygen atoms and one to three nitrogen atoms (e.g., morpholinyl, etc.); saturated 3- to 6-membered heteromonocyclic group containing one to two sulfur atoms and one to three nitrogen atoms (e.g., thiazolidinyl, etc.). Examples of partially unsaturated heterocyclyl and heterocyclo radicals include dihydrothiophene, dihydropyran, dihydrofuran and dihydrothiazole.

[0050] The term "heteroaryl" is an aromatic heteroatom-containing ring-shaped radical having one, two, or three rings wherein at least one ring is aromatic. Examples of heteroaryl radicals include unsaturated 3- to 6- membered heteromonocyclic group containing one to four nitrogen atoms, e.g., pyrrolyl, pyrrolinyl, imidazolyl, pyrazolyl, pyridyl, pyrimidyl, pyrazinyl, pyridazinyl, triazolyl (e.g., 4H-1,2,4-triazolyl, 1H-1,2,3-triazolyl, 2H-1,2,3-triazolyl, etc.) tetrazolyl (e.g. 1H-tetrazolyl, 2H-tetrazolyl, etc.), etc.; unsaturated condensed heterocyclyl group containing one to five nitrogen atoms, e.g., indolyl, isoindolyl, indoliziny, benzimidazolyl, quinolyl, isoquinolyl, indazolyl, benzotriazolyl, tetrazolopyridazinyl (e.g., tetrazolo[1,5-b]pyridazinyl, etc.), etc.; unsaturated 3- to 6-membered heteromonocyclic group containing an oxygen atom, e.g., pyranyl, furyl, etc.; unsaturated 3- to 6-membered heteromonocyclic group containing a sulfur atom, e.g., thienyl, etc.; unsaturated 3- to 6-membered heteromonocyclic group containing one to two oxygen atoms and one to three nitrogen atoms, e.g., oxazolyl, isoxazolyl, oxadiazolyl (e.g., 1,2,4-oxadiazolyl, 1,3,4-oxadiazolyl, 1,2,5-oxadiazolyl, etc.) etc.; unsaturated condensed heterocyclyl group containing one to two oxygen atoms and one to three nitrogen atoms (e.g., benzoxazolyl, benzoxadiazolyl, etc.); unsaturated 3- to 6-membered heteromonocyclic group containing one to two sulfur atoms and one to three nitrogen atoms, e.g., thiazolyl, thiadiazolyl (e.g., 1,2,4-thiadiazolyl, 1,3,4-thiadiazolyl, 1,2,5-thiadiazolyl, etc.) etc.; unsaturated condensed heterocyclyl group containing one to two sulfur atoms and one to three nitrogen atoms (e.g., benzothiazolyl, benzothiadiazolyl, etc.) and the like. The term "heteroaryl" also includes radicals where heteroaryl radicals are fused with aryl radicals. Examples of such fused bicyclic radicals include benzofuran, benzothiophene, and the like. Said heterocyclyl group may be substituted at a substitutable position with one or more



substituents selected independently from alkyl, hydroxyl, halo, alkoxy, oxo, amino and alkylamino.

[0051] The terms "heterocyclalkyl" and "heterocycloalkyl" are saturated and partially unsaturated heterocycl-substituted alkyl radicals, such as pyrrolidinylmethyl, and heteroaryl-substituted alkyl radicals, such as pyridylmethyl, quinolylmethyl, thienylmethyl, furylethyl, and quinolyethylethyl. The heteroaryl in said heteroaralkyl may be additionally substituted with halo, alkyl, alkoxy, haloalkyl and haloalkoxy.

[0052] The term "acyl" is a radical provided by the residue after removal of hydroxyl from an organic acid. Examples of such acyl radicals include alkanoyl and aroyl radicals.

[0053] The term "alkanoyl" or "alkylcarbonyl" are alkyl radicals as defined herein attached to a carbonyl radical. Examples of such alkanoyl radicals include formyl, acetyl, propionyl, butyryl, isobutyryl, valeryl, isovaleryl, pivaloyl, hexanoyl, and trifluoroacetyl.

[0054] The terms "arylcabonyl" (also called "aroyl") and "aralkylcarbonyl" include radicals having aryl or aralkyl radicals, as defined herein, attached to a carbonyl radical. Examples of such radicals include substituted or unsubstituted phenylcarbonyl, naththoyl, and benzylcarbonyl. The aryl in said aroyl and aralkylcarbonyl radicals may be additionally substituted.

[0055] The term "aralkoxy" is an aralkyl radical as defined herein attached through an oxygen atom to other radicals.

[0056] The term "aralkoxyalkyl" is an aralkoxy radical as defined herein attached through an oxygen atom to an alkyl radical.

[0057] The terms "aralkyl" and "arylalkyl" are aryl-substituted alkyl radicals such as benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, and diphenylethyl. The aryl in said aralkyl may be additionally substituted with halo, alkyl,

alkoxy, haloalkyl and haloalkoxy. The terms benzyl and phenylmethyl are interchangeable.

[0058] The term "aralkylamino" is an aralkyl radical as defined herein attached through an amino nitrogen atom to other radicals. The terms "N-arylaminoalkyl" and "N-aryl-N-alkyl-aminoalkyl" are amino groups which have been substituted with one aryl radical or one aryl and one alkyl radical, respectively, and having the amino group attached to an alkyl radical. Examples of such radicals include N-phenylaminomethyl and N-phenyl-N-methylaminomethyl.

[0059] The term "aralkylthio" is an aralkyl radical attached to a sulfur atom.

[0060] The term "aralkylthioalkyl" is an aralkylthio radical attached through a sulfur atom to an alkyl radical.

[0061] The term "arylamino" is an amino group that has been substituted with one or two aryl radicals. An example of such arylamino radicals is N-phenylamino. The "arylamino" radicals may be further substituted on the aryl ring portion of the radical.

[0062] The term "aryloxyalkyl" is a radical having an aryl radical attached to an alkyl radical through a divalent oxygen atom.

[0063] The term "arylthioalkyl" is a radical having an aryl radical attached to an alkyl radical through a divalent sulfur atom.

[0064] The term "sulfonyl", whether used alone or linked to other terms such as alkylsulfonyl, is a divalent  $\text{-SO}_2\text{-}$  radical.

[0065] The term "alkylsulfonyl" is an alkyl radical attached to a sulfonyl radical, where alkyl is defined as above. More preferred alkylsulfonyl radicals are "lower alkylsulfonyl" radicals having one to six carbon atoms. Examples of such lower alkylsulfonyl radicals include methylsulfonyl, ethylsulfonyl and propylsulfonyl. The "alkylsulfonyl" radicals may be further

substituted with one or more halo atoms, such as fluoro, chloro or bromo, to provide haloalkylsulfonyl radicals.

[0066] The terms "sulfamyl", "aminosulfonyl" and "sulfonamidyl" are  $-\text{SO}_2\text{NH}_2$ .

[0067] The term "pharmaceutically acceptable" is used adjectivally herein to mean that the modified noun is appropriate for use in a pharmaceutical product; that is the "pharmaceutically-acceptable" material is relatively safe and/or non-toxic, though not necessarily providing a separable therapeutic benefit by itself. Pharmaceutically-acceptable cations include metallic ions and organic ions. More preferred metallic ions include, but are not limited to, appropriate alkali metal salts, alkaline earth metal salts and other physiologically-acceptable metal ions. Exemplary ions include aluminum, calcium, lithium, magnesium, potassium, sodium and zinc, in their usual valences. Preferred organic ions include protonated tertiary amines and quaternary ammonium cations, including in part, trimethylamine, diethylamine, N,N'-dibenzylethylenediamine, chloroprocaine, choline, diethanolamine, ethylenediamine, meglumine (N-methylglucamine) and procaine. Exemplary pharmaceutically acceptable acids include without limitation hydrochloric acid, hydrobromic acid, phosphoric acid, sulfuric acid, methanesulfonic acid, acetic acid, formic acid, tartaric acid, maleic acid, malic acid, citric acid, isocitric acid, succinic acid, lactic acid, gluconic acid, glucuronic acid, pyruvic acid, oxalacetic acid, fumaric acid, propionic acid, aspartic acid, glutamic acid, benzoic acid, and the like.

[0068] The term "prodrug" refers to a chemical compound that can be converted into a therapeutic compound by metabolic or simple chemical processes within the body of the subject.

[0069] The term "subject" for purposes of treatment or prevention includes any human or animal subject who is in need of treatment. The subject can be a domestic livestock species, a

laboratory animal species, a zoo animal or a companion animal. In one embodiment, the subject is a mammal. In another embodiment, the mammal is a human being.

[0070] The term "PBS" stands for phosphate buffered saline.

[0071] The term "HEPES" stands for N-2-hydroxyethylpiperazine-N'-2-ethanesulfonic acid.

[0072] The term "BSA" stands for bovine serum albumin.

[0073] The term "STI" stands for soybean trypsin inhibitor.

[0074] The term "Pefabloc" stands for (4-(2-aminoethyl)benzenesulfonyl)fluoride, HCl salt.

[0075] The term "Phosphoramidon" stands for N- $\alpha$ -L-rhamnopyranosyloxy(hydroxyphosphinyl)-L-leucyl-L-tryptophan.

[0076] The term "FCC" stands for flash column chromatography.

[0077] The term " $K_i$ " stands for inhibitory rate constant.

[0078] The term "FLIPR" stands for fluorometric imaging plate reader.

[0079] The term "HEK 293" stands for the human embryonic kidney 293 cell line.

[0080] The term "Boc" stands for tert-butoxycarbonyl.

[0081] The term "DIC" stands for diisopropylcarbodiimide.

[0082] The term "DCM" stands for dichloromethane.

[0083] The term "DBU" stands for 1,8-diazabicyclo[5.4.0]undec-7-ene.

[0084] The term "phosgene" stands for  $\text{COCl}_2$ .

[0085] The term "DCE" stands for dichloroethane.

[0086] The term "DMF" stands for dimethylformamide.

[0087] The term "EtOAc" stands for ethyl acetate.

[0088] The term "HOBt" stands for 1-Hydroxybenzotriazole hydrate.

[0089] The term "MeOH" stands for methanol.

[0090] The term "TFA" stands for trifluoroacetic acid.

[0091] The MCH receptor antagonists employed in the present invention can exist in tautomeric, geometric or stereoisomeric

forms. The present invention contemplates all such compounds, including cis- and trans-geometric isomers, E- and Z-geometric isomers, R- and S-enantiomers, diastereomers, d- and l-isomers, the racemic mixtures thereof and other mixtures thereof. Pharmaceutically acceptable salts of such tautomeric, geometric or stereoisomeric forms are also included within the invention. The terms "cis" and "trans", as used herein, denote a form of geometric isomerism in which two carbon atoms connected by a double bond and each substituted by a hydrogen and another group, will each have a hydrogen atom on the same side of the double bond ("cis") or on opposite sides of the double bond ("trans"). Some of the compounds described herein contain alkenyl groups, and are meant to include both cis and trans or "E" and "Z" geometric forms. Furthermore, some of the compounds described herein contain one or more stereocenters and are meant to include R, S, and mixtures or R and S forms for each stereocenter present.

[0092] The MCH receptor antagonists utilized in the present invention may be in the form of free bases or pharmaceutically-acceptable acid addition salts thereof. The term "pharmaceutically-acceptable salts" are salts commonly used to form alkali metal salts and to form addition salts of free acids or free bases. The nature of the salt may vary, provided that it is pharmaceutically acceptable. Suitable pharmaceutically-acceptable acid addition salts of compounds for use in the present methods may be prepared from an inorganic acid or from an organic acid. Examples of such inorganic acids are hydrochloric, hydrobromic, hydroiodic, nitric, carbonic, sulfuric and phosphoric acid. Appropriate organic acids may be selected from aliphatic, cycloaliphatic, aromatic, araliphatic, heterocyclic, carboxylic and sulfonic classes of organic acids, examples of which are formic, acetic, propionic, succinic, glycolic, gluconic, lactic, malic, tartaric, citric, ascorbic, glucuronic, maleic, fumaric, pyruvic, aspartic, glutamic,



benzoic, anthranilic, mesylic, 4-hydroxybenzoic, phenylacetic, mandelic, embonic (pamoic), methanesulfonic, ethanesulfonic, benzenesulfonic, pantothenic, 2-hydroxyethanesulfonic, toluenesulfonic, sulfanilic, cyclohexylaminosulfonic, stearic, algenic, hydroxybutyric, salicylic, galactaric and galacturonic acid. Suitable pharmaceutically-acceptable base addition salts of compounds of use in the present methods include metallic salts made from aluminum, calcium, lithium, magnesium, potassium, sodium and zinc or organic salts made from N,N'-dibenzylethylenediamine, chlorprocaine, choline, diethanolamine, ethylenediamine, meglumine (N-methylglucamine), and procaine. All of these salts may be prepared by conventional means from the corresponding compound by reacting, for example, the appropriate acid or base with the compound of any Formula set forth herein.

[0093] The MCH receptor antagonists useful in the practice of the present invention can be formulated into pharmaceutical compositions and administered by any means that will deliver a therapeutically effective dose. Such compositions can be administered orally, parenterally, by inhalation spray, rectally, intradermally, transdermally, or topically, in dosage unit formulations containing conventional nontoxic pharmaceutically-acceptable carriers, adjuvants, and vehicles as desired. Topical administration may also involve the use of transdermal administration such as transdermal patches or iontophoresis devices. The term parenteral as used herein includes subcutaneous, intravenous, intramuscular, or intrasternal injection, or infusion techniques. Formulation of drugs is discussed in, e.g., Hoover, Remington's Pharmaceutical Sciences, (1975), and Liberman & Lachman, Eds., Pharmaceutical Dosage Forms, (1980).

[0094] Injectable preparations, for example, sterile injectable aqueous or oleaginous suspensions, can be formulated according to the known art using suitable dispersing or wetting

agents and suspending agents. The sterile injectable preparation may also be a sterile injectable solution or suspension in a nontoxic parenterally-acceptable diluent or solvent. Among the acceptable vehicles and solvents that may be employed are water, Ringer's solution, and isotonic sodium chloride solution. In addition, sterile, fixed oils are conventionally employed as a solvent or suspending medium. For this purpose, any bland fixed oil may be employed, including synthetic mono- or diglycerides. In addition, fatty acids such as oleic acid are useful in the preparation of injectables. Dimethyl acetamide, surfactants including ionic and non-ionic detergents, and polyethylene glycols can be used. Mixtures of solvents and wetting agents such as those discussed above are also useful.

[0095] Suppositories for rectal administration of the compounds discussed herein can be prepared by mixing the active agent with a suitable non-irritating excipient such as cocoa butter, synthetic mono-, di-, or triglycerides, fatty acids, or polyethylene glycols, which are solid at ordinary temperatures but liquid at the rectal temperature, and which will therefore melt in the rectum and release the drug.

[0096] Solid dosage forms for oral administration may include capsules, tablets, pills, powders, and granules. In such solid dosage forms, the compounds are ordinarily combined with one or more adjuvants appropriate to the indicated route of administration. If administered per os, the compounds can be admixed with lactose, sucrose, starch powder, cellulose esters of alkanolic acids, cellulose alkyl esters, talc, stearic acid, magnesium stearate, magnesium oxide, sodium and calcium salts of phosphoric and sulfuric acids, gelatin, acacia gum, sodium alginate, polyvinylpyrrolidone, and/or polyvinyl alcohol, and then tableted or encapsulated for convenient administration. Such capsules or tablets can contain a controlled-release formulation as can be provided in a dispersion of active compound in hydroxypropylmethyl cellulose. In the case of

capsules, tablets, and pills, the dosage forms can also comprise buffering agents such as sodium citrate, or magnesium or calcium carbonate or bicarbonate. Tablets and pills can additionally be prepared with enteric coatings.

[0097] For therapeutic purposes, formulations for parenteral administration can be in the form of aqueous or non-aqueous isotonic sterile injection solutions or suspensions. These solutions and suspensions can be prepared from sterile powders or granules having one or more of the carriers or diluents mentioned for use in the formulations for oral administration. The compounds can be dissolved in water, polyethylene glycol, propylene glycol, ethanol, corn oil, cottonseed oil, peanut oil, sesame oil, benzyl alcohol, sodium chloride, and/or various buffers. Other adjuvants and modes of administration are well and widely known in the pharmaceutical art.

[0098] Liquid dosage forms for oral administration can include pharmaceutically acceptable emulsions, solutions, suspensions, syrups, and elixirs containing inert diluents commonly used in the art, such as water. Such compositions can also comprise adjuvants, such as wetting agents, emulsifying and suspending agents, and sweetening, flavoring, and perfuming agents.

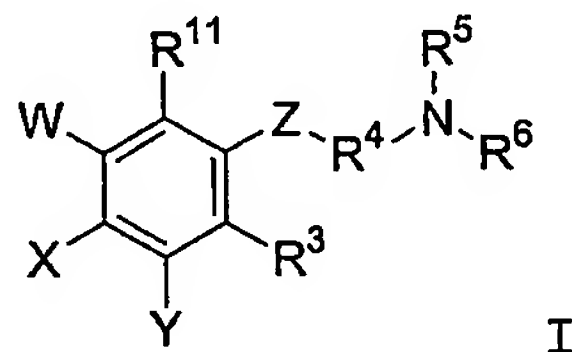
[0099] The amount of active ingredient that can be combined with the carrier materials to produce a single dosage of the MCH receptor antagonist will vary depending upon the patient and the particular mode of administration. In general, the pharmaceutical compositions may contain an MCH receptor antagonist in the range of about 1 to about 250 mg, more typically, in the range of about 10 to about 200 mg and still more typically, between about 25 to about 150 mg. A daily dose of about 0.01 to about 80 mg/kg body weight, or more typically, between about 0.5 to about 50 mg/kg body weight and even more typically, from about 1 to about 25 mg/kg body weight, may be

appropriate. The daily dose can be administered in one to about four doses per day.

[0100] The MCH receptor antagonists are administered in such amount as will be therapeutically effective in the treatment or control of the disorder or condition being treated. It will be appreciated that the amount of active ingredients contained in an individual dose of each dosage form need not in itself constitute an effective amount, as the necessary effective amount could be reached by administration of a number of individual doses. Those skilled in the art will appreciate that the quantity of active MCH receptor antagonist to be administered will vary depending upon the age, sex, and body weight of the subject to be treated, the type of disease, or syndrome to be treated, the particular method and scheduling of administration, and what other MCH receptor antagonist, if any, is co-administered. Dosage amounts for an individual patient may thus be above or below the typical dosage ranges. Generally speaking, the MCH receptor antagonist can be employed in any amount known to be effective at treating, preventing or controlling the disorder or condition being treated. The doses may be single doses or multiple doses per day, with the number of doses taken per day and the time allowed between doses varying depending on the individual needs of the patient. Optimization of treatment, including dosage amount, method and time of administration, is thus best determined by a skilled practitioner through close monitoring of patients on an individual basis. Those skilled in the art will appreciate that dosages may also be determined with guidance from Goodman & Goldman, The Pharmacological Basis of Therapeutics, 9th Ed. (1996), App. II, pp. 1707-1711 and from Goodman & Goldman, The Pharmacological Basis of Therapeutics, 10th Ed. (2001), App. II, pp. 475-493.

Description of the Preferred Embodiments

[0101] In one embodiment of the present invention, the MCH receptor antagonist is a compound of Formula I, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, having the following structure:



[0102] wherein:

[0103] W is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0104] X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

[0105] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0106] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)-$ ,  $-CH_2N(R^9)-$ , and  $-N(R^{12})C(O)N(R^9)-$ ;

[0107]  $R^1$  is selected from the group consisting of alkyl, cycloalkyl, cycloalkylalkyl, aryl, aralkyl, heteroaryl, and heteroarylalkyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0108]  $R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, arylcycloalkyl, and heteroarylalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the



group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0109]  $R^3$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0110]  $R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and heteroarylalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, alkoxycarbonyl, and halo;

[0111]  $R^5$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0112]  $R^6$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0113]  $R^7$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0114]  $R^8$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl,

carboxyalkyl, and cyano, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0115]  $R^9$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0116]  $R^{10}$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0117]  $R^{11}$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano; and

[0118]  $R^{12}$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano.

[0119] In another embodiment, the MCH receptor antagonist consists of compounds of Formula I, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0120] W is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0121] X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

[0122] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0123] Z is selected from the group consisting of -CH=CH-, -CH<sub>2</sub>N(R<sup>9</sup>)-, -C(O)-, -C(O)N(R<sup>9</sup>)-, and -N(R<sup>12</sup>)C(O)N(R<sup>9</sup>)-;

[0124] R<sup>1</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, lower cycloalkylalkyl, aryl, lower aralkyl, heteroaryl, and lower heteroarylalkyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0125] R<sup>2</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, lower arylcycloalkyl, and lower heteroarylalkyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein R<sup>2</sup> or the unsaturated fused heterocyclic ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0126] R<sup>3</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0127] R<sup>4</sup> is selected from the group consisting of a bond, lower alkyl, lower alkenyl, lower alkynyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower heteroarylalkyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, lower alkoxycarbonyl, and halo;

[0128] R<sup>5</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower

aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0129] R<sup>6</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0130] R<sup>7</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0131] R<sup>8</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0132] R<sup>9</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0133] R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0134]  $R^{11}$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano; and

[0135]  $R^{12}$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano.

[0136] In another embodiment, the MCH receptor antagonist consists of compounds of Formula I, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0137] W is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0138] X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

[0139] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;



[0140] Z is selected from the group consisting of -CH=CH-, -CH<sub>2</sub>N(R<sup>9</sup>)-, -C(O)-, -C(O)N(R<sup>9</sup>)-, and -N(R<sup>12</sup>)C(O)N(R<sup>9</sup>)-;

[0141] R<sup>1</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0142] R<sup>2</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl,

cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolyl, octahydroquinolyl, hexahydroquinolyl, tetrahydroquinolyl, dihydroquinolyl, and quinolyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0143]  $R^3$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy,

naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0144]  $R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

[0145]  $R^5$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl,

triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0146] R<sup>6</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0147]  $R^7$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0148]  $R^8$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or  $R^8$  together with  $R^2$



and the nitrogen to which they are attached may form an isoindoliny ring;

[0149] R<sup>9</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidiny ring or a piperidiny ring;

[0150] R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl,

pentoxypropyl, pentoxybutyl, pentoxypropyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0151]  $R^{11}$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypropyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano; and

[0152]  $R^{12}$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl,

pentoxypropyl, pentoxybutyl, pentoxypropyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano.

[0153] In another embodiment, the MCH receptor antagonist consists of compounds of Formula I, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0154] W is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0155] X is  $-OR^1$ ;

[0156] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0157] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)-$ ,  $-C(O)N(R^9)-$ , and  $-N(R^{12})C(O)N(R^9)-$ ;

[0158]  $R^1$  is selected from the group consisting of alkyl, cycloalkyl, cycloalkylalkyl, aryl, aralkyl, heteroaryl, and heteroarylalkyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0159]  $R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, arylcycloalkyl, and heteroarylalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0160]  $R^3$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0161]  $R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and heteroarylalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, alkoxycarbonyl, and halo;

[0162]  $R^5$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0163]  $R^6$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0164]  $R^7$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0165]  $R^8$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0166]  $R^9$  is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl,

carboxyalkyl, and cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0167] R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

[0168] R<sup>11</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano; and

[0169] R<sup>12</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano.

[0170] In another embodiment, the MCH receptor antagonist consists of compounds of Formula I, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0171] W is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0172] X is -OR<sup>1</sup>;

[0173] Y is selected from the group consisting of hydrogen, -N(R<sup>7</sup>)C(O)NR<sup>2</sup>R<sup>8</sup>, -N(R<sup>7</sup>)C(O)OR<sup>2</sup>, -N(R<sup>7</sup>)C(O)R<sup>2</sup>, -N(R<sup>7</sup>)SO<sub>2</sub>R<sup>2</sup>, and -NR<sup>2</sup>R<sup>7</sup>;

[0174] Z is selected from the group consisting of -CH=CH-, -CH<sub>2</sub>N(R<sup>9</sup>)-, -C(O)-, -C(O)N(R<sup>9</sup>)-, and -N(R<sup>12</sup>)C(O)N(R<sup>9</sup>)-;

[0175] R<sup>1</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, lower cycloalkylalkyl, aryl, lower aralkyl, heteroaryl, and lower heteroarylalkyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;



[0176]  $R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, lower arylcycloalkyl, and lower heteroarylalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0177]  $R^3$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0178]  $R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, lower alkynyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower heteroarylalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, lower alkoxycarbonyl, and halo;

[0179]  $R^5$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0180]  $R^6$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower

alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0181] R<sup>7</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0182] R<sup>8</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0183] R<sup>9</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0184] R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

[0185] R<sup>11</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano; and

[0186] R<sup>12</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano.

[0187] In another embodiment, the MCH receptor antagonist consists of compounds of Formula I, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0188] W is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0189] X is  $-OR^1$ ;

[0190] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0191] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)-$ ,  $-C(O)N(R^9)-$ , and  $-N(R^{12})C(O)N(R^9)-$ ;

[0192]  $R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenyl,

naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0193] R<sup>2</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl,

tetrahydroindolyl, dihydroindolyl, indolyl, octahydroquinolyl, hexahydroquinolyl, tetrahydroquinolyl, dihydroquinolyl, and quinolyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0194]  $R^3$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0195]  $R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl,



benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

[0196] R<sup>5</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl,

carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0197] R<sup>6</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0198] R<sup>7</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl,

propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0199]  $R^8$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an isoindolinyl ring;

[0200]  $R^9$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl,

ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

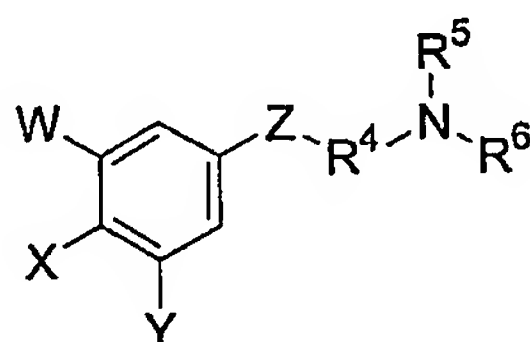
[0201] R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0202] R<sup>11</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl,

hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano; and

[0203]  $R^{12}$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano.

[0204] In another embodiment, the MCH receptor antagonist is selected from a subclass of compounds of Formula I represented by Formula II:



II



[0205] wherein:

[0206] W is selected from the group consisting of hydrogen, hydroxy, alkyl, and alkoxy;

[0207] X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

[0208] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0209] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)-$ ,  $-C(O)N(R^9)-$ , and  $-N(R^{12})C(O)N(R^9)-$ ;

[0210]  $R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0211]  $R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0212]  $R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

[0213]  $R^5$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;



[0214]  $R^6$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0215]  $R^7$  is selected from the group consisting of hydrogen, alkyl, and aryl;

[0216]  $R^8$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0217]  $R^9$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0218]  $R^{10}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl; and

[0219]  $R^{12}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl;

[0220] or a pharmaceutically-acceptable salt, tautomer or prodrug thereof.

[0221] In another embodiment, the MCH receptor antagonist consists of compounds of Formula II, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0222] W is selected from the group consisting of hydrogen, hydroxy, lower alkyl, and lower alkoxy;

[0223] X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

[0224] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0225] Z is selected from the group consisting of -CH=CH-, -CH<sub>2</sub>N(R<sup>9</sup>)-, -C(O)-, -C(O)N(R<sup>9</sup>)-, and -N(R<sup>12</sup>)C(O)N(R<sup>9</sup>)-;

[0226] R<sup>1</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0227] R<sup>2</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein R<sup>2</sup> or the unsaturated fused heterocyclic ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0228] R<sup>4</sup> is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

[0229] R<sup>5</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0230] R<sup>6</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0231]  $R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

[0232]  $R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0233]  $R^9$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0234]  $R^{10}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl; and

[0235]  $R^{12}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl.

[0236] In another embodiment, the MCH receptor antagonist consists of compounds of Formula II, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0237] W is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, methoxy, ethoxy, propoxy, butoxy, pentyloxy, and hexyloxy;

[0238] X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

[0239] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0240] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)-$ ,  $-C(O)N(R^9)-$ , and  $-N(R^{12})C(O)N(R^9)-$ ;

[0241]  $R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0242]  $R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl,

dihydroisoindolyl, isoindolyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolyl, octahydroquinolyl, hexahydroquinolyl, tetrahydroquinolyl, dihydroquinolyl, and quinolyl, wherein R<sup>2</sup> or the ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0243] R<sup>3</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0244] R<sup>4</sup> is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl,



oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

[0245]  $R^5$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0246]  $R^6$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl,

naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0247]  $R^7$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

[0248]  $R^8$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an isoindolinyl ring;

[0249]  $R^9$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl,

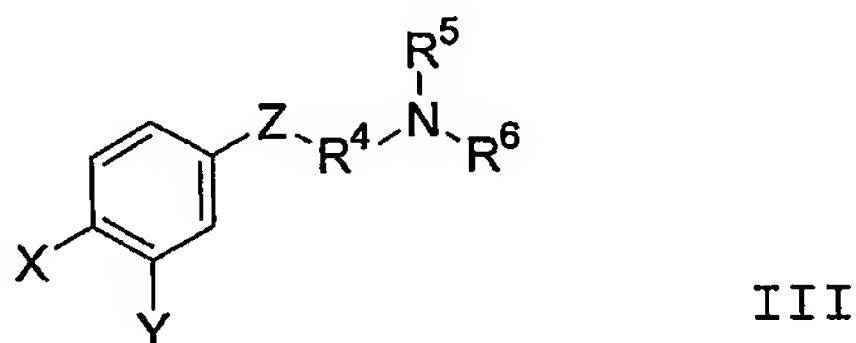
methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0250] R<sup>10</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl; and

[0251] R<sup>12</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl,

butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl.

[0252] In another embodiment, the MCH receptor antagonist is selected from a subclass of compounds of Formula I represented by Formula III:



[0253] wherein:

[0254] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0255] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0256] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0257]  $R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0258]  $R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0259]  $R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

[0260]  $R^5$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0261]  $R^6$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0262]  $R^7$  is selected from the group consisting of hydrogen, alkyl, and aryl;

[0263]  $R^8$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0264]  $R^9$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0265]  $R^{10}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl; and

[0266]  $R^{12}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl;

[0267] or a pharmaceutically-acceptable salt, tautomer or prodrug thereof.



[0268] In another embodiment, the MCH receptor antagonist consists of compounds of Formula III, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0269] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0270] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0271] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0272]  $R^1$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0273]  $R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0274]  $R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

[0275]  $R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to

which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0276]  $R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0277]  $R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

[0278]  $R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0279]  $R^9$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0280]  $R^{10}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl; and

[0281]  $R^{12}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl.

[0282] In another embodiment, the MCH receptor antagonist consists of compounds of Formula III, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0283] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0284] Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

[0285] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0286]  $R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0287]  $R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl,

biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0288]  $R^3$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0289]  $R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl,

allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

[0290]  $R^5$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl,



wherein  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0291]  $R^6$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0292]  $R^7$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

[0293]  $R^8$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an isoindolinyl ring;

[0294]  $R^9$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl,

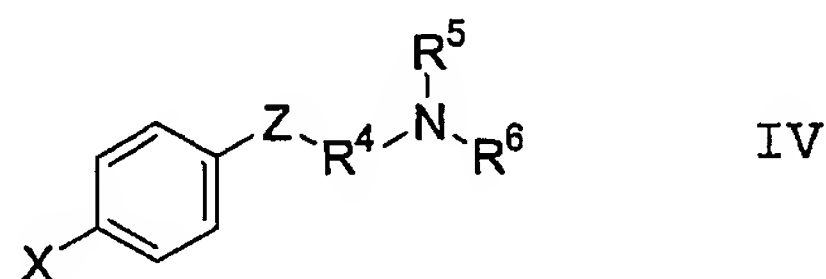
cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0295]  $R^{10}$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl; and

[0296]  $R^{12}$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl,

hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl.

[0297] In another embodiment, the MCH receptor antagonist is selected from a subclass of compounds of Formula I represented by Formula IV:



[0298] wherein:

[0299] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0300] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0301]  $R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0302]  $R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0303]  $R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

[0304]  $R^5$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0305]  $R^6$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0306]  $R^7$  is selected from the group consisting of hydrogen, alkyl, and aryl;

[0307]  $R^8$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0308]  $R^9$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0309]  $R^{10}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl; and

[0310]  $R^{12}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl;

[0311] or a pharmaceutically-acceptable salt, tautomer or prodrug thereof.

[0312] In another embodiment, the MCH receptor antagonist consists of compounds of Formula IV, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0313] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0314] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0315]  $R^1$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0316]  $R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0317]  $R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

[0318]  $R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;



[0319]  $R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0320]  $R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

[0321]  $R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0322]  $R^9$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0323]  $R^{10}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl; and

[0324]  $R^{12}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl.

[0325] In another embodiment, the MCH receptor antagonist consists of compounds of Formula IV, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0326] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0327] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0328]  $R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl,

cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0329]  $R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl,

octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein R<sup>2</sup> or ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0330] R<sup>3</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

[0331] R<sup>4</sup> is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl,

diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

[0332] R<sup>5</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0333] R<sup>6</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl,

methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0334]  $R^7$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

[0335]  $R^8$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an isoindolinyl ring;

[0336]  $R^9$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl,



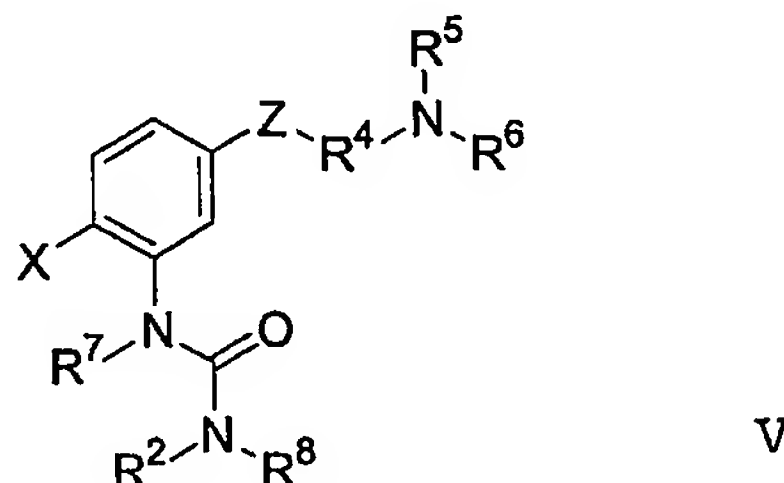
propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0337] R<sup>10</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl; and

[0338] R<sup>12</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl,

pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl.

[0339] In another embodiment, the MCH receptor antagonist is selected from a subclass of compounds of Formula I represented by Formula V:



[0340] wherein:

[0341] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0342] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0343]  $R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0344]  $R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0345]  $R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with

R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

[0346] R<sup>5</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0347] R<sup>6</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0348] R<sup>7</sup> is selected from the group consisting of hydrogen, alkyl, and aryl;

[0349] R<sup>8</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system; and

[0350] R<sup>9</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0351] or a pharmaceutically-acceptable salt, tautomer or prodrug thereof.

[0352] In another embodiment, the MCH receptor antagonist consists of compounds of Formula V, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0353] X is selected from the group consisting of -OR<sup>1</sup> and -SR<sup>1</sup>;

[0354] Z is selected from the group consisting of -CH=CH-, -CH<sub>2</sub>N(R<sup>9</sup>)-, -C(O)N(R<sup>9</sup>)-, and -NHC(O)NR<sup>9</sup>-;

[0355] R<sup>1</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected

from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0356]  $R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0357]  $R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

[0358]  $R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0359]  $R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0360]  $R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

[0361]  $R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are

attached may form an unsaturated fused heterocyclic ring system; and

[0362]  $R^9$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring.

[0363] In another embodiment, the MCH receptor antagonist consists of compounds of Formula V, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0364] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0365] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0366]  $R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0367]  $R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl,



phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

[0368]  $R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl,

diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

[0369]  $R^5$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0370]  $R^6$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl,

methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

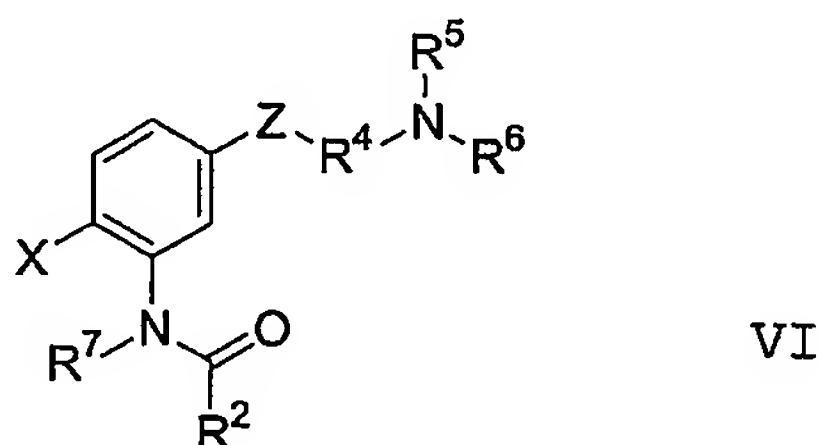
[0371]  $R^7$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

[0372]  $R^8$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an isoindolinyl ring; and

[0373]  $R^9$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl,

propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring.

[0374] In another embodiment, the MCH receptor antagonist is selected from a subclass of compounds of Formula I represented by Formula VI:



[0375] wherein:

[0376] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0377] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0378]  $R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0379]  $R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

[0380]  $R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

[0381]  $R^5$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0382]  $R^6$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0383]  $R^7$  is selected from the group consisting of hydrogen, alkyl, and aryl; and

[0384]  $R^9$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0385] or a pharmaceutically-acceptable salt, tautomer or prodrug thereof.

[0386] In another embodiment, the MCH receptor antagonist consists of compounds of Formula VI, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0387] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0388] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0389]  $R^1$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected



from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0390]  $R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

[0391]  $R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

[0392]  $R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0393]  $R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0394]  $R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

[0395]  $R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are

attached may form an unsaturated fused heterocyclic ring system; and

[0396]  $R^9$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring.

[0397] In another embodiment, the MCH receptor antagonist consists of compounds of Formula VI, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0398] X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

[0399] Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

[0400]  $R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

[0401]  $R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl,

phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

[0402]  $R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl,

diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

[0403] R<sup>5</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0404] R<sup>6</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl,

methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0405]  $R^7$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

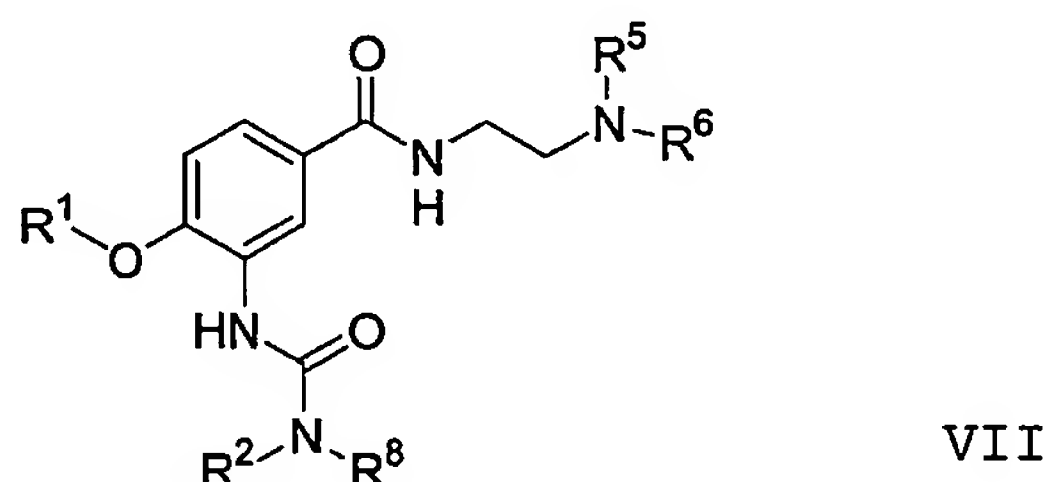
[0406]  $R^8$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an isoindolinyl ring; and

[0407]  $R^9$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl,



propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring.

[0408] In another embodiment, the MCH receptor antagonist is selected from a subclass of compounds of Formula I represented by Formula VII:



[0409] wherein:

[0410] R<sup>1</sup> is selected from the group consisting of cycloalkyl and aryl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, and halo;

[0411] R<sup>2</sup> is selected from the group consisting of alkyl, aryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein R<sup>2</sup> or the unsaturated fused heterocyclic ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, aryloxy, and halo;

[0412] R<sup>5</sup> is selected from the group consisting of hydrogen and alkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0413]  $R^6$  is selected from the group consisting of hydrogen and alkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring; and

[0414]  $R^8$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, and aryl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

[0415] or a pharmaceutically-acceptable salt, tautomer or prodrug thereof.

[0416] In another embodiment, the MCH receptor antagonist consists of compounds of Formula VII, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0417]  $R^1$  is selected from the group consisting of lower cycloalkyl and aryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, and halo;

[0418]  $R^2$  is selected from the group consisting of lower alkyl, aryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, aryloxy, and halo;

[0419]  $R^5$  is selected from the group consisting of hydrogen and lower alkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

[0420]  $R^6$  is selected from the group consisting of hydrogen and lower alkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring; and

[0421]  $R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, and aryl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system.

[0422] In another embodiment, the MCH receptor antagonist consists of compounds of Formula VII, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0423]  $R^1$  is selected from the group consisting of cyclopentyl, cyclohexyl, phenyl, naphthyl, and biphenyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, hydroxy, methoxy, ethoxy, propoxy, chloro, bromo, and fluoro;

[0424]  $R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, phenylethyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, phenylethenyl, phenylpropenyl, phenylcyclopropyl, biphenylcyclopropyl, and naphthylcyclopropyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of dihydroisoindolyl, dihydroindolyl, tetrahydroisoquinolyl, and tetrahydroquinolyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, hydroxy, methoxy, ethoxy, propoxy, phenoxy, naphthyloxy, biphenyloxy, chloro, bromo, and fluoro;

[0425]  $R^5$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, and hexyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

[0426]  $R^6$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, and hexyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring; and

[0427]  $R^8$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, and biphenyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form a ring selected from the group consisting of dihydroisoindolyl, dihydroindolyl, tetrahydroisoquinolyl, and tetrahydroquinolyl.

[0428] In another embodiment, the MCH receptor antagonist consists of compounds of Formula VII, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein:

[0429]  $R^1$  is selected from the group consisting of phenyl, and naphthyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, chloro, and fluoro;

[0430]  $R^2$  is selected from the group consisting of methyl, ethyl, phenyl, naphthyl, biphenyl, benzyl, phenylethyl, cyclopentylethyl, phenylethenyl, phenylcyclopropyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a dihydroisoindolyl ring, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, propyl, methoxy, phenoxy, chloro, bromo, and fluoro;

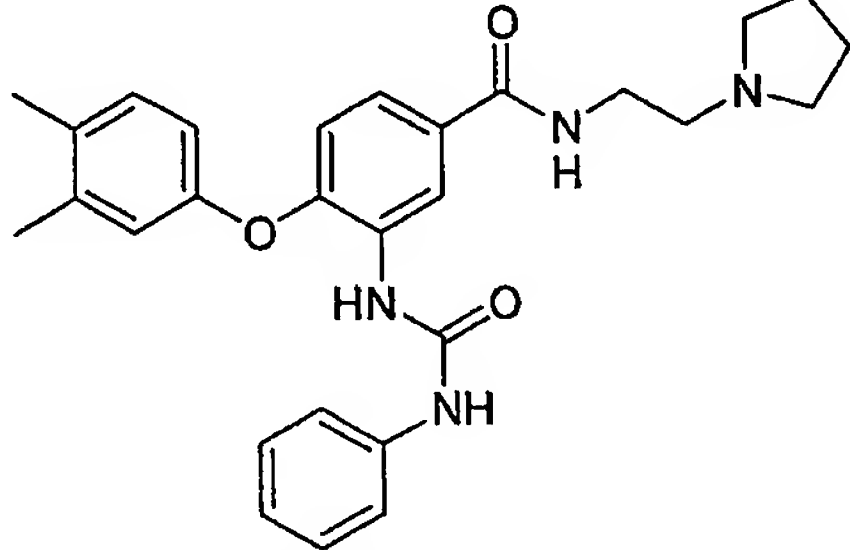
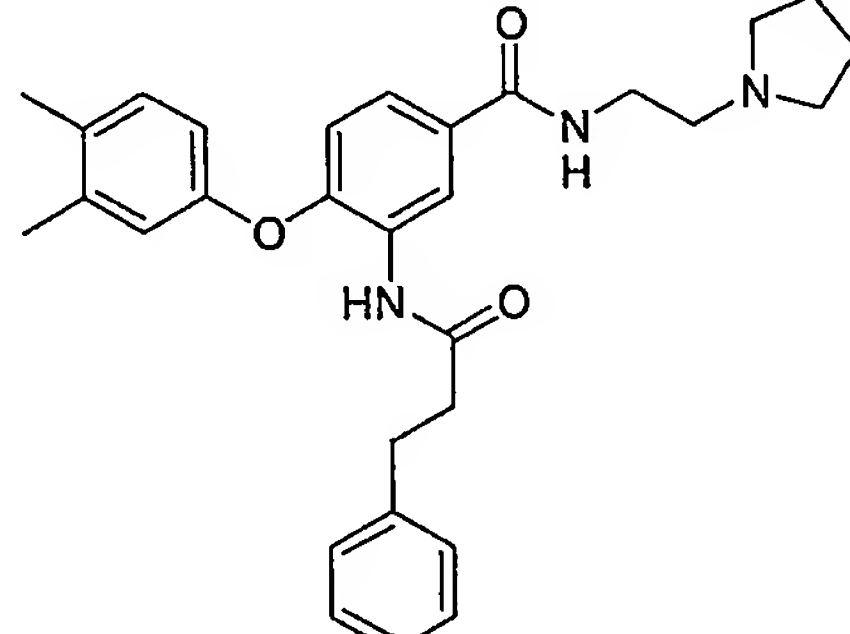
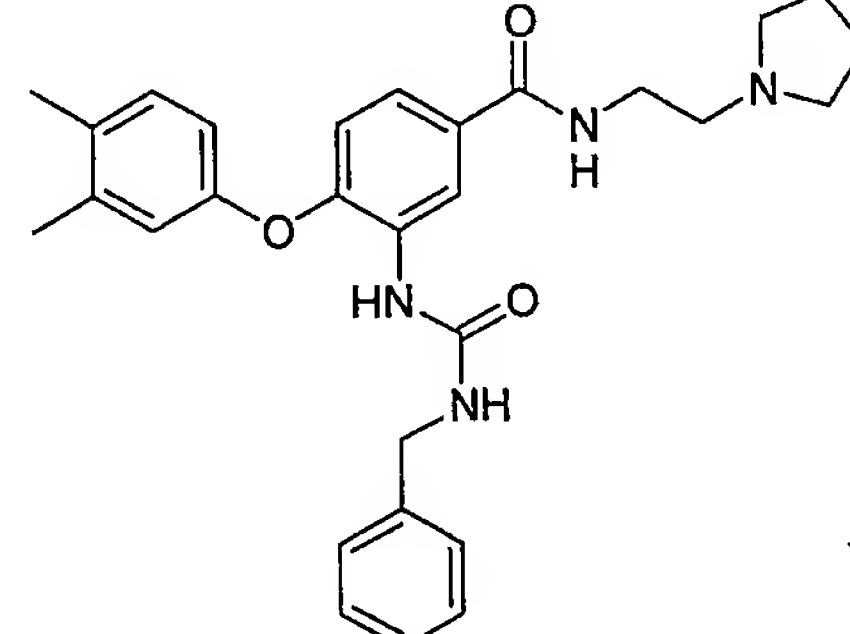
[0431]  $R^5$  is hydrogen or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached form a pyrrolidinyl ring;

[0432]  $R^6$  is hydrogen or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached form a pyrrolidinyl ring; and

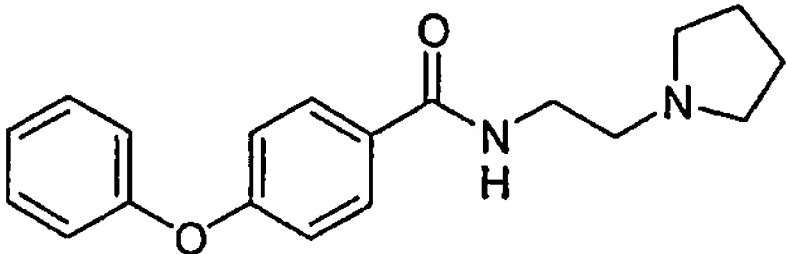
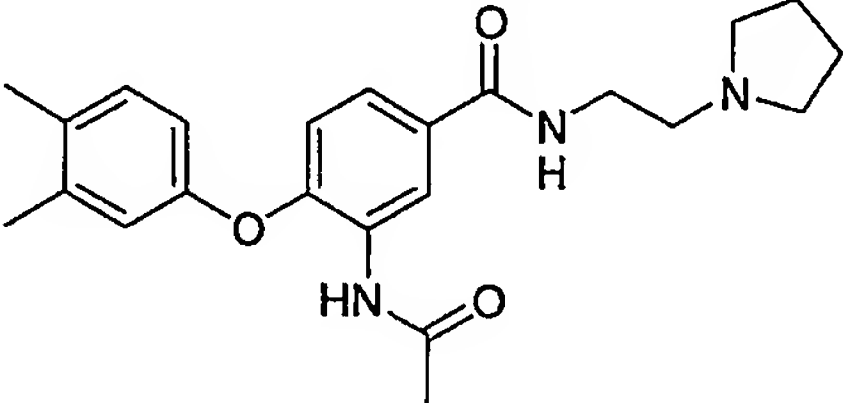
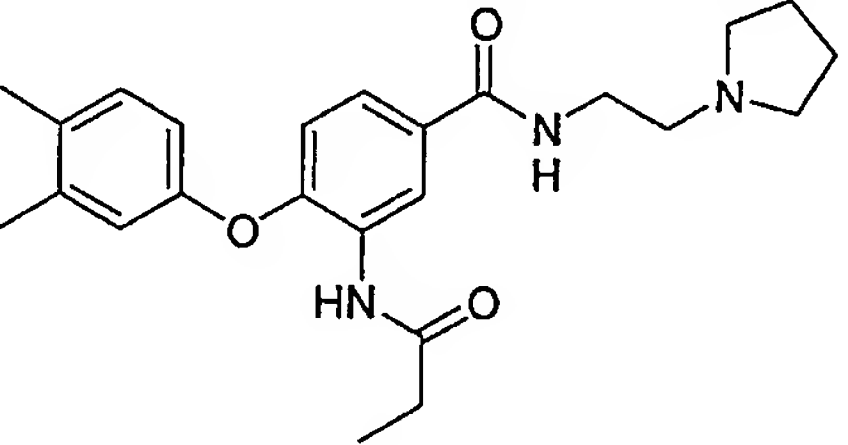
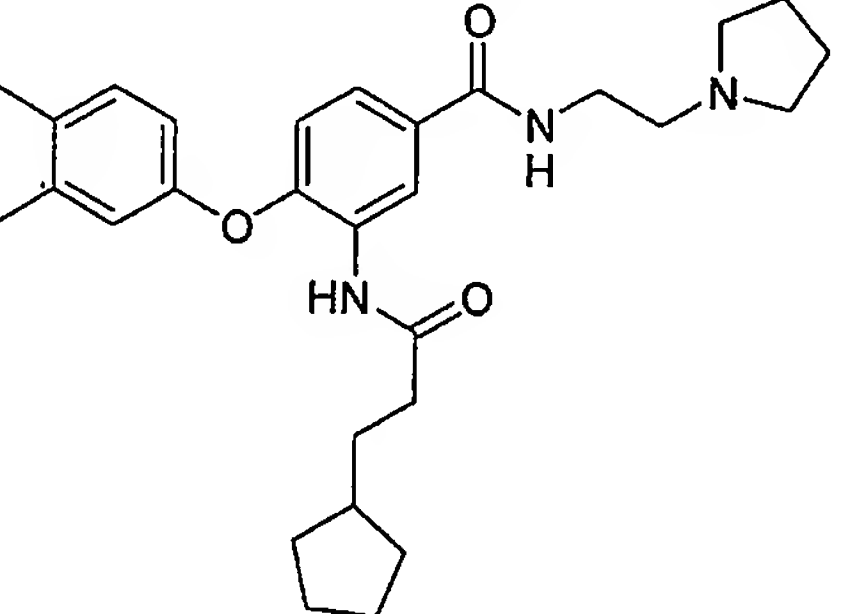
[0433]  $R^8$  is selected from the group consisting of hydrogen, methyl, and phenyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form a dihydroisoindolyl ring.

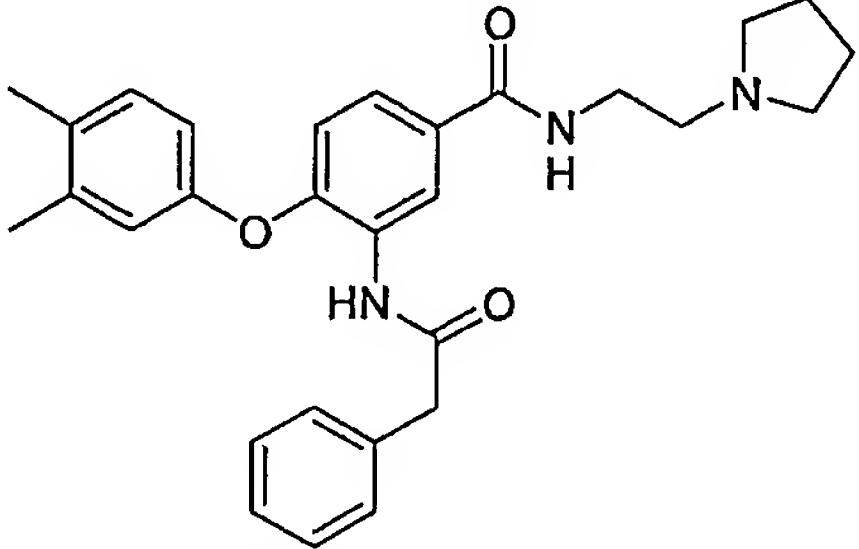
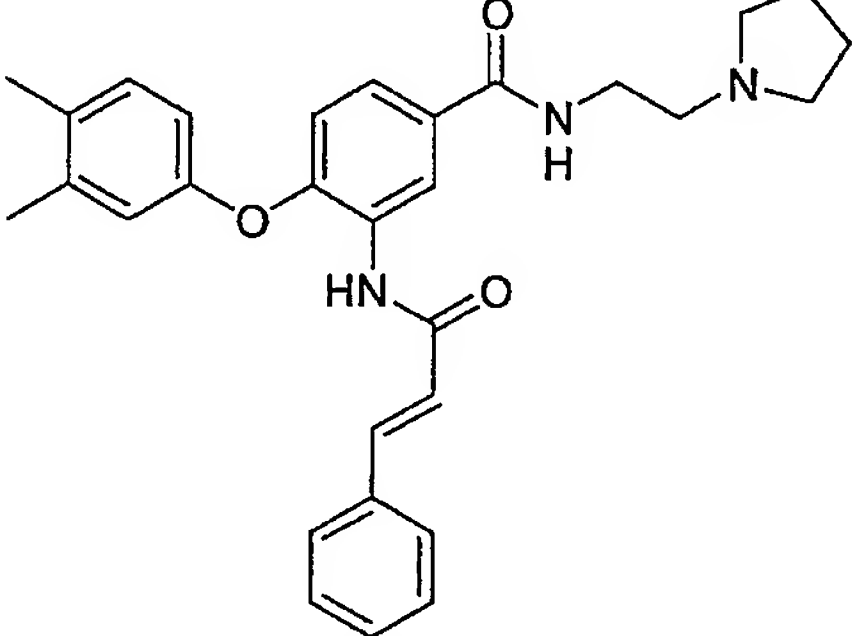
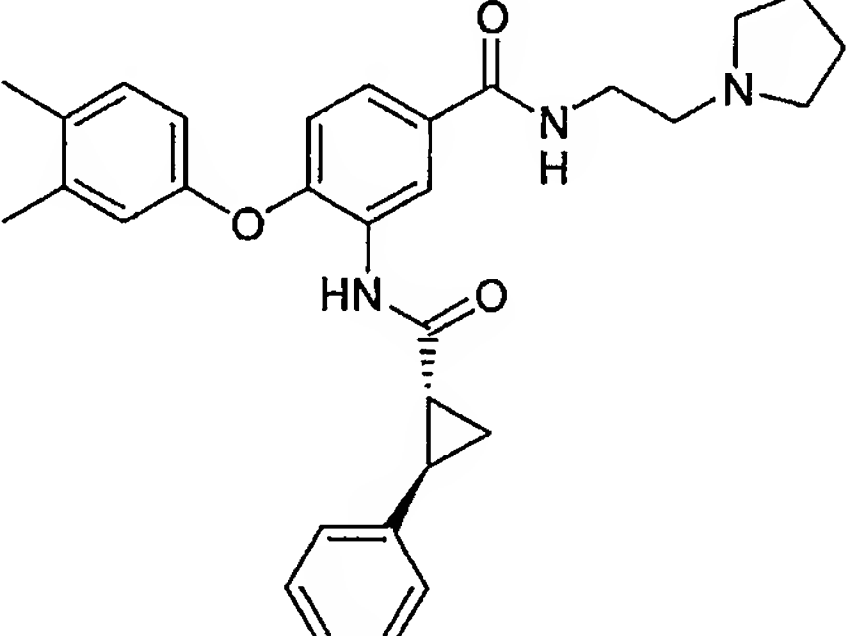
[0434] In another embodiment, the compound of Formula I is selected from the group of compounds listed in Table 1.

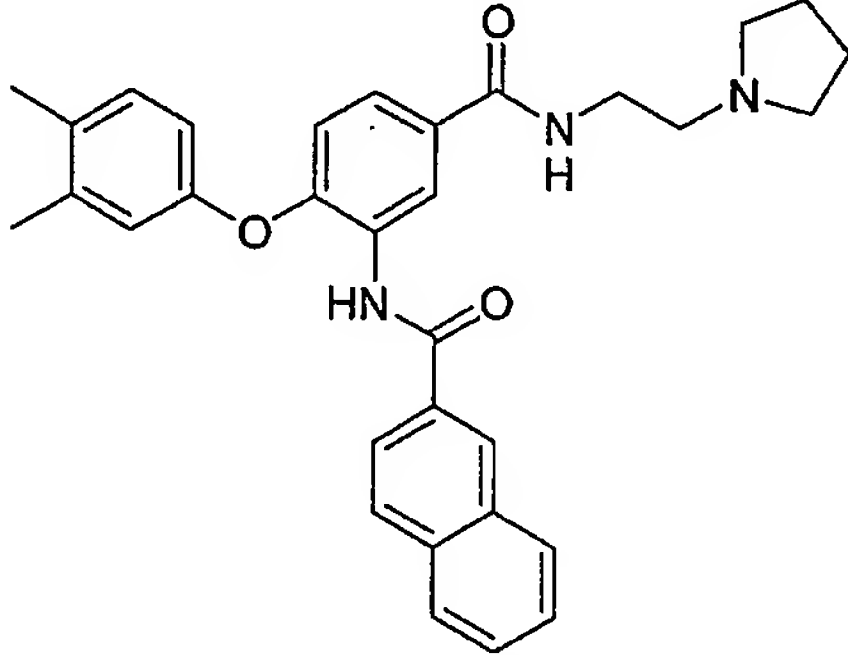
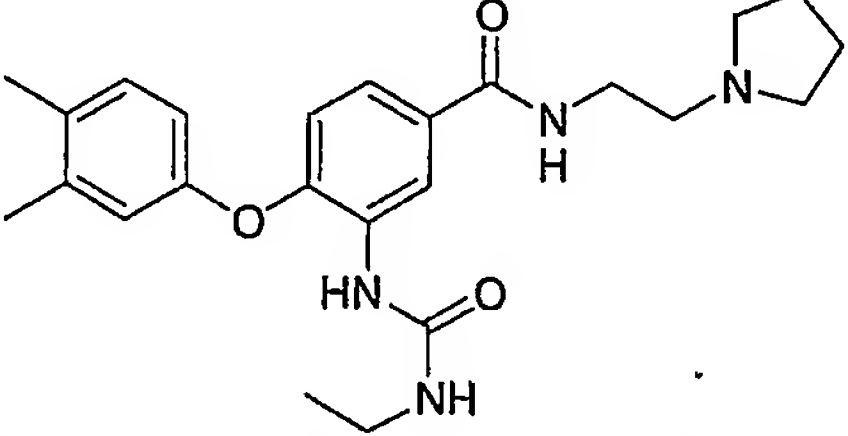
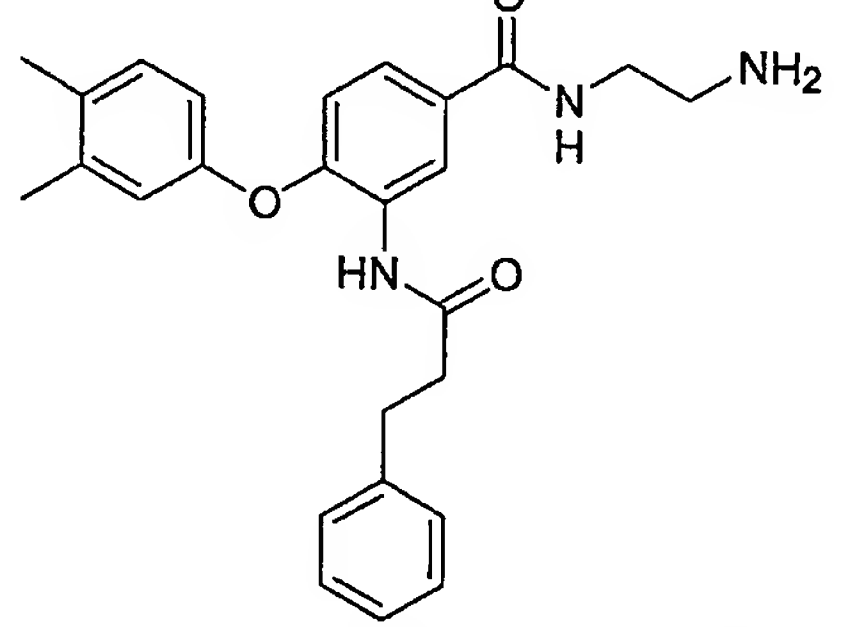
TABLE 1

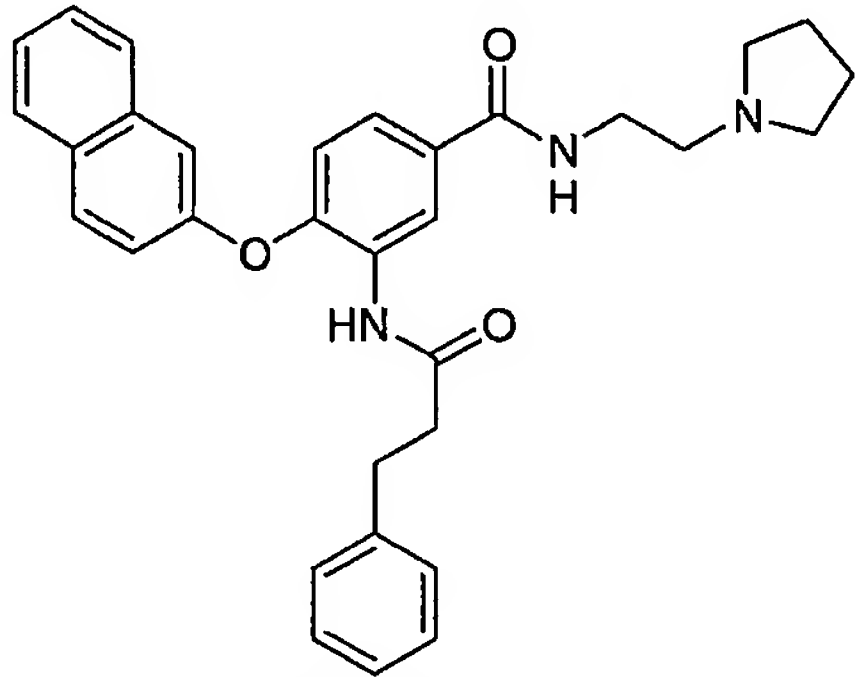
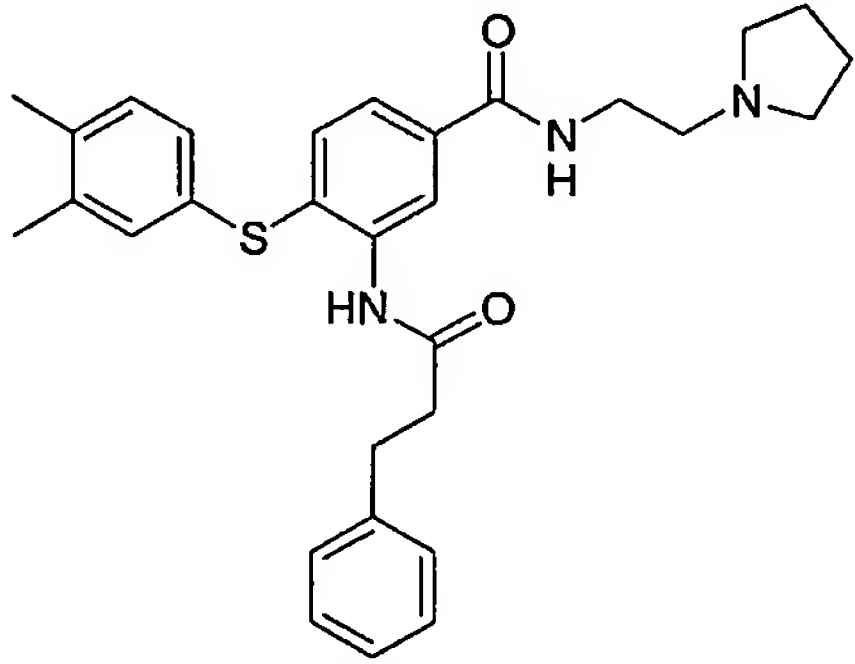
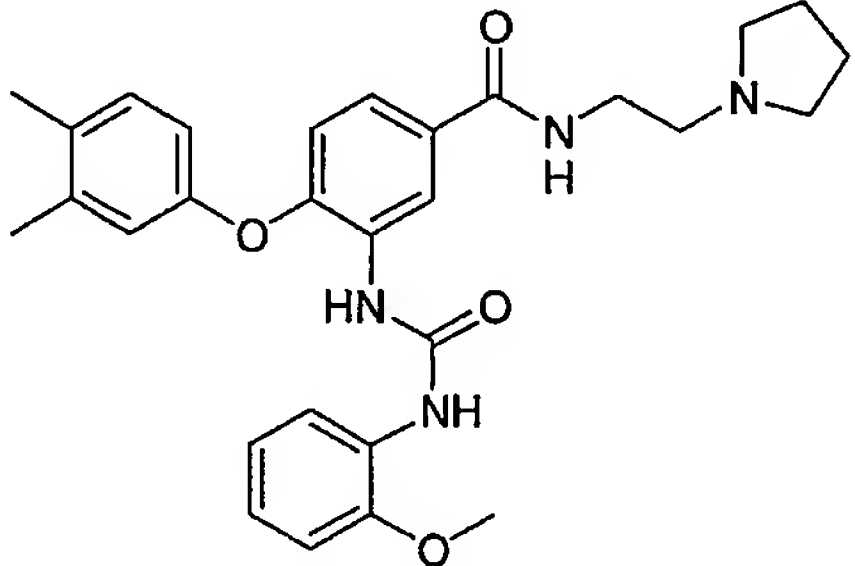
Compound No.	Structure
1	 <p>4-[(3,4-dimethylphenyl)oxy]-3- {[(phenylamino)carbonyl]amino}-N-(2-(1- pyrrolidinyl)ethyl)benzamide MS <math>m/z</math> 473 (M+H); MW 472</p>
5	 <p>4-[(3,4-dimethylphenyl)oxy]-3-[(3- phenylpropanoyl)amino]-N-(2-(1- pyrrolidinyl)ethyl)benzamide MS <math>m/z</math> 486 (M+H); MW 485</p>
6	 <p>4-[(3,4-dimethylphenyl)oxy]-3- ([(phenylmethyl)amino]carbonyl)amino)-N-(2-(1- pyrrolidinyl)ethyl)benzamide MS <math>m/z</math> 487 (M+H); MW 486</p>

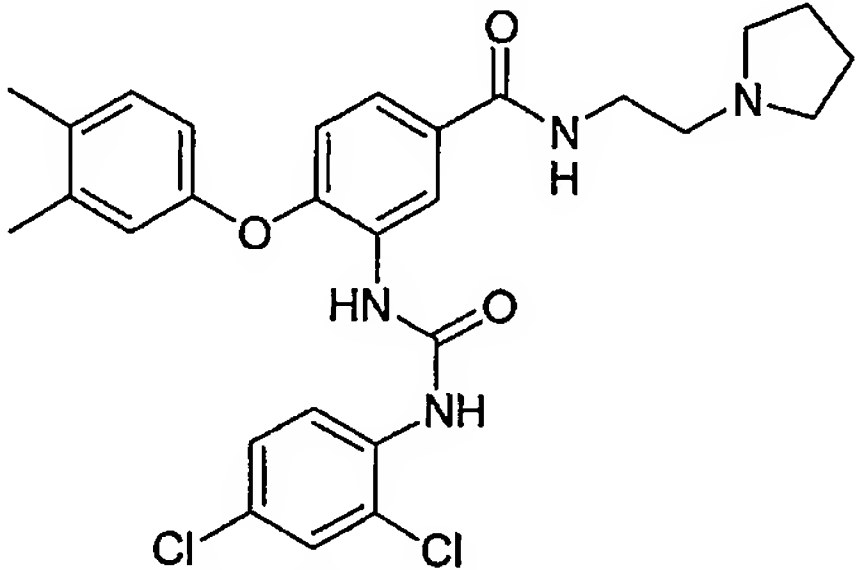
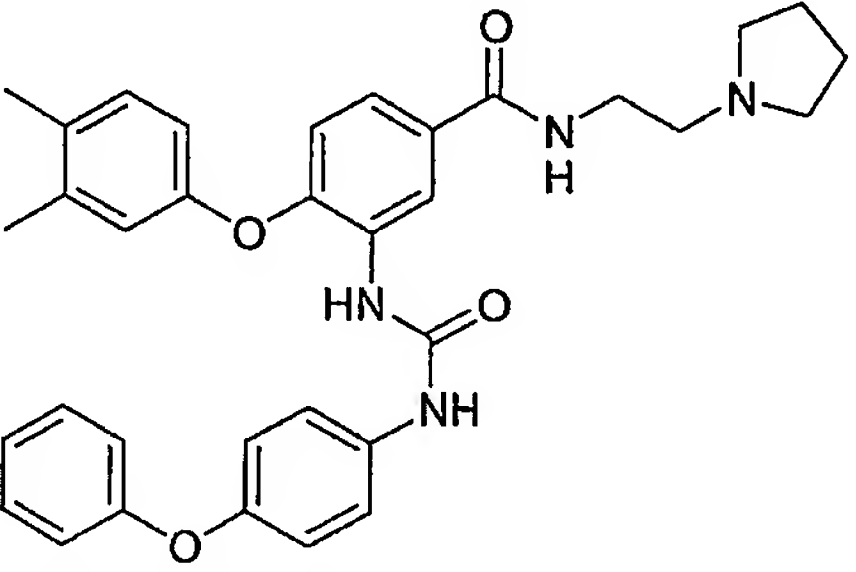
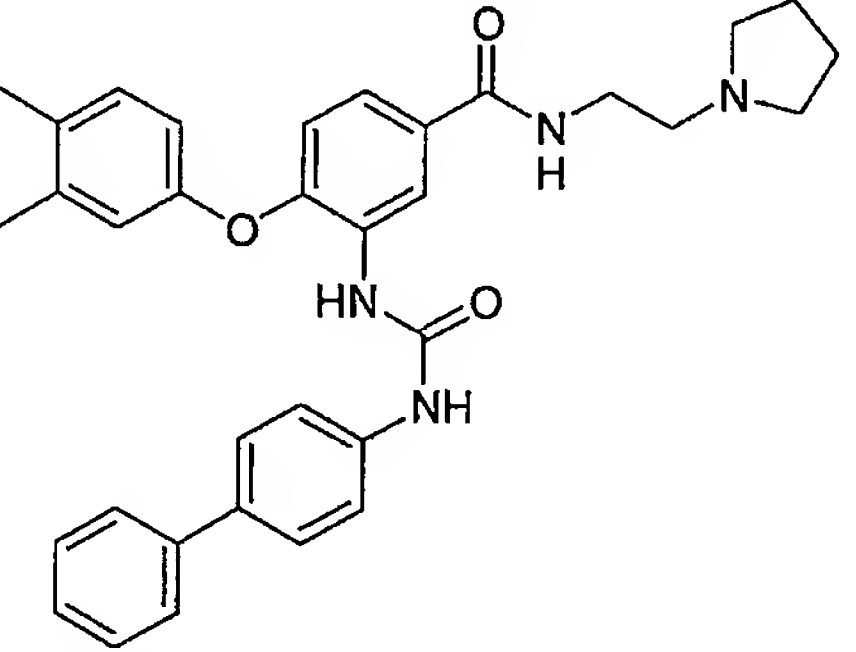


Compound No.	Structure
8	 <p>4-(phenyloxy)-N-(2-(1-pyrrolidinyl)ethyl)benzamide MS <math>m/z</math> 311.4 (M+H); MW 310.4</p>
10	 <p>3-acetylamino-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <math>m/z</math> 396 (M+H); MW 395</p>
11	 <p>4-(3,4-dimethylphenoxy)-3-propionylamino-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <math>m/z</math> 400 (M+H); MW 409</p>
12	 <p>3-(3-cyclopentylpropionylamino)-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <math>m/z</math> 478 (M+H); MW 477</p>

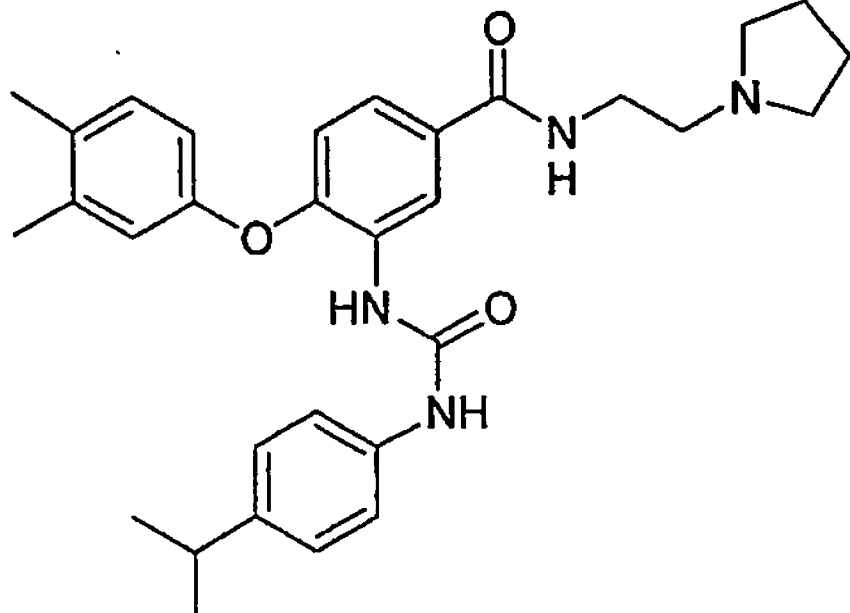
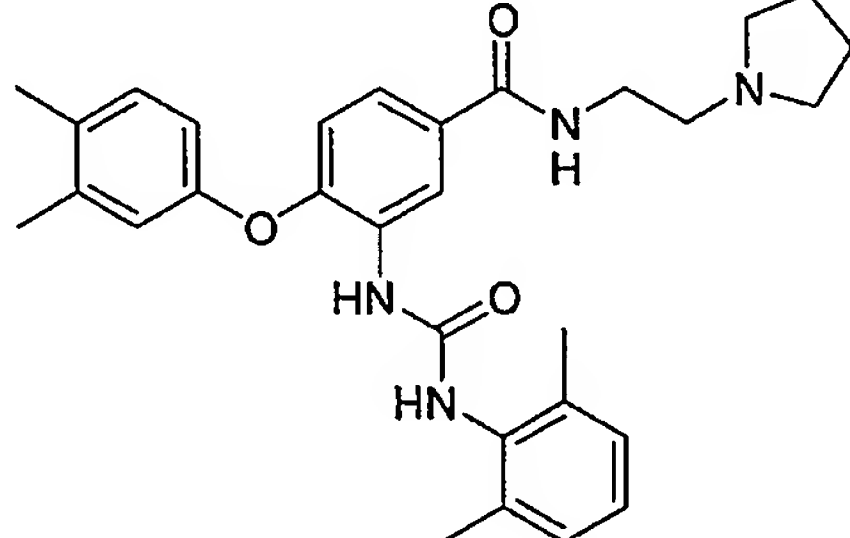
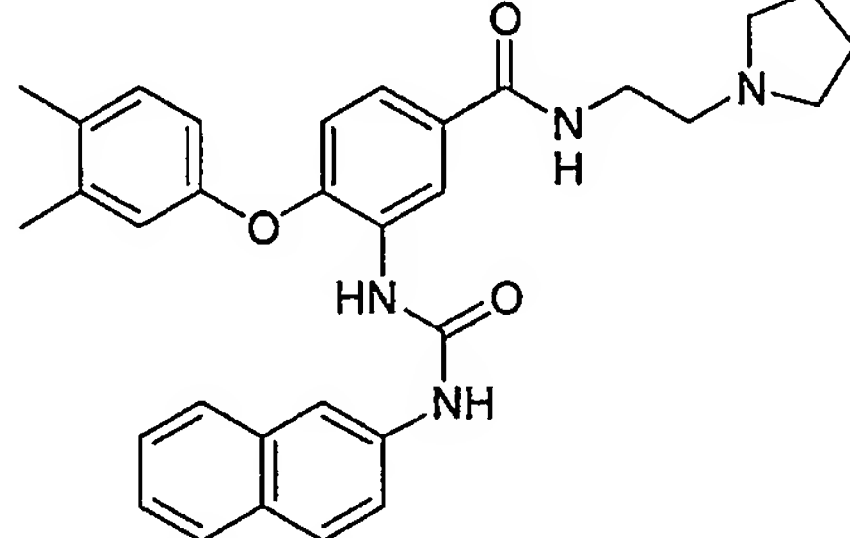
Compound No.	Structure
13	 <p>4-(3,4-dimethylphenoxy)-3-phenylacetyl-amino-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 472 (M+H); MW 471</p>
15	 <p>4-(3,4-dimethylphenoxy)-3-(3-phenylacryloyl-amino)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 484 (M+H); MW 483</p>
16	 <p>4-(3,4-dimethylphenoxy)-3-[(2-phenylcyclopropanecarbonyl)amino]-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 498 (M+H); MW 497</p>

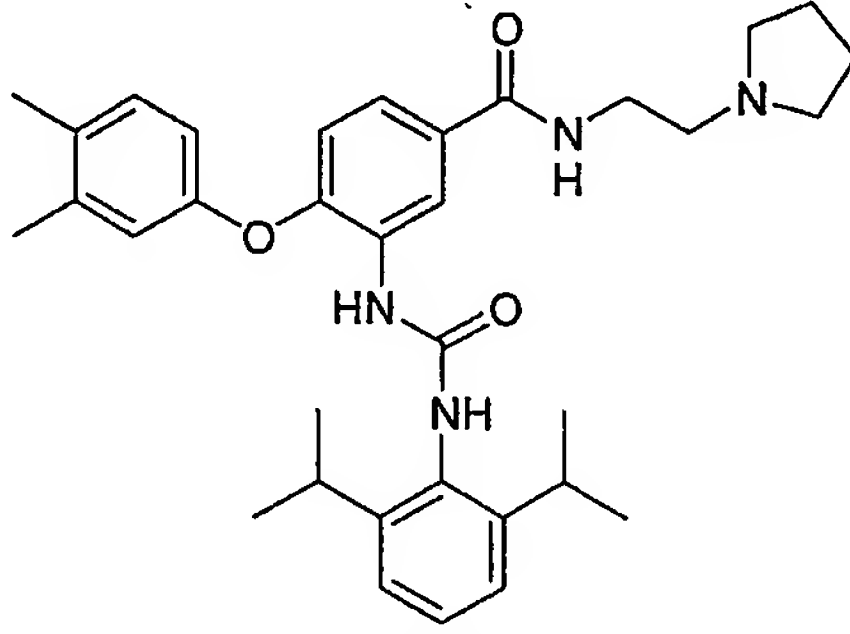
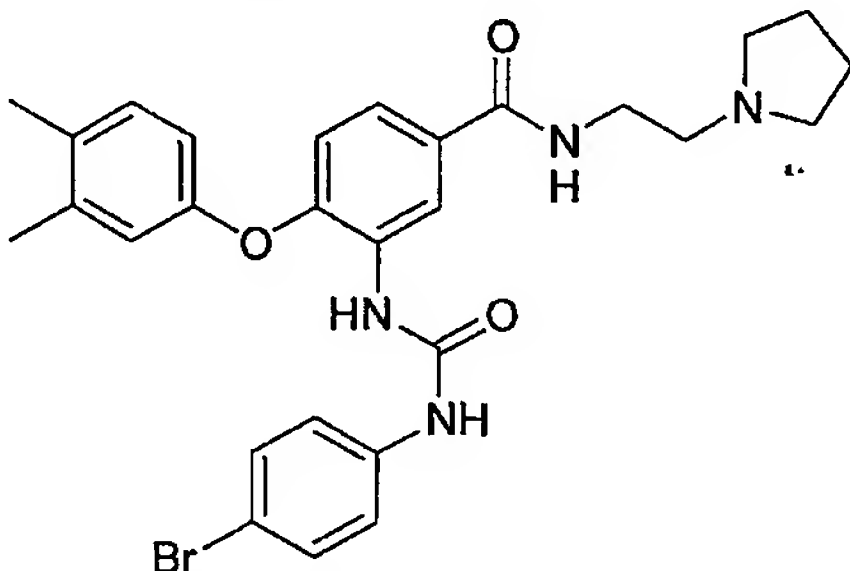
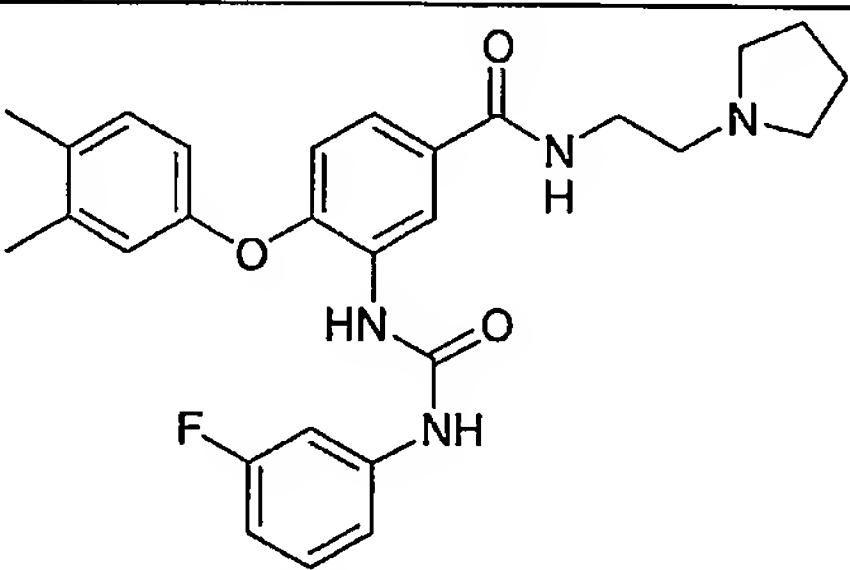
Compound No.	Structure
17	 <p>naphthalene-2-carboxylic acid [2-(3,4-dimethylphenoxy)-5-(2-pyrrolidin-1-ylethylcarbamoyl)phenyl]amide MS <i>m/z</i> 508 (M+H); MW 507</p>
18	 <p>4-(3,4-dimethylphenoxy)-3-(3-ethylureido)-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 425 (M+H); MW 424</p>
20	 <p>N-(2-aminoethyl)-4-(3,4-dimethylphenoxy)-3-(3-phenylpropionylamino)benzamide MS <i>m/z</i> 432 (M+H); MW 431</p>

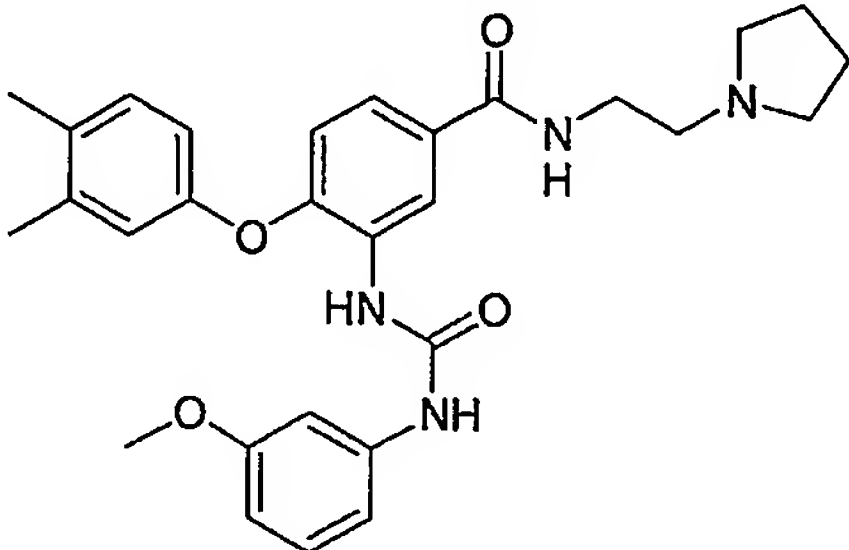
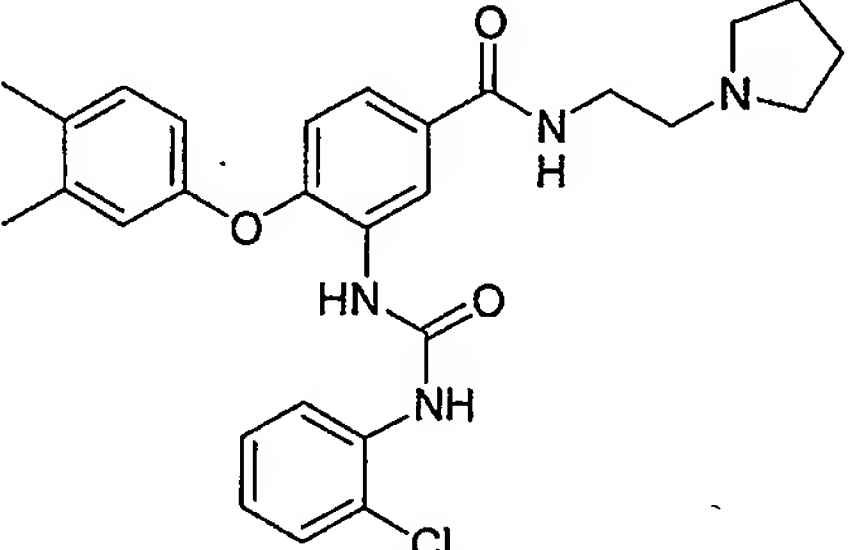
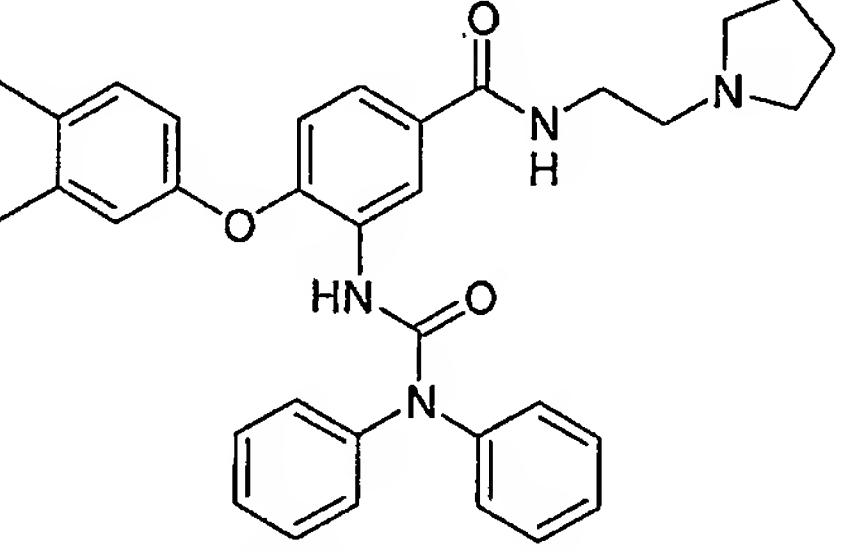
Compound No.	Structure
22	 <p>4-methoxy-3-(3-phenylpropionylamino)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 508 (M+H); MW 507</p>
27	 <p>4-(naphthalen-2-yl-oxy)-3-(3-phenylpropionylamino)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 502 (M+H); MW 501</p>
30	 <p>4-(3,4-dimethylphenoxy)-3-[3-(2-methoxyphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 503 (M+H); MW 502</p>

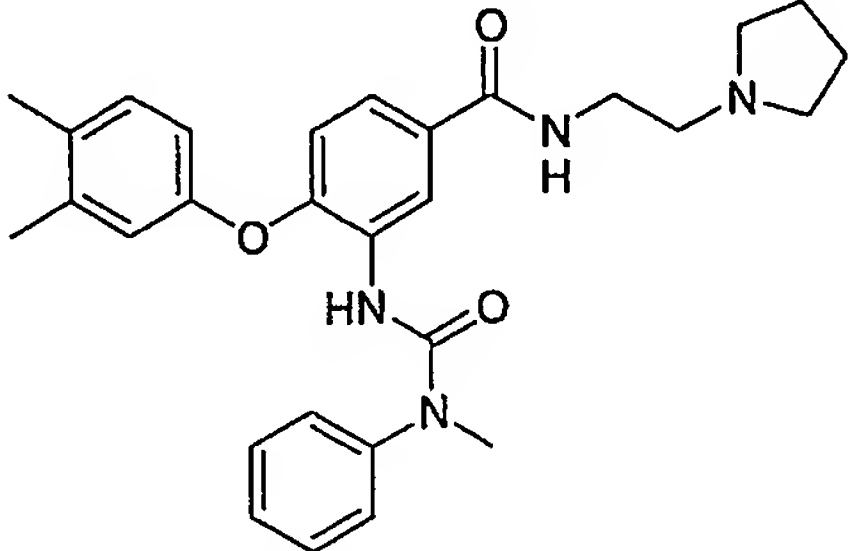
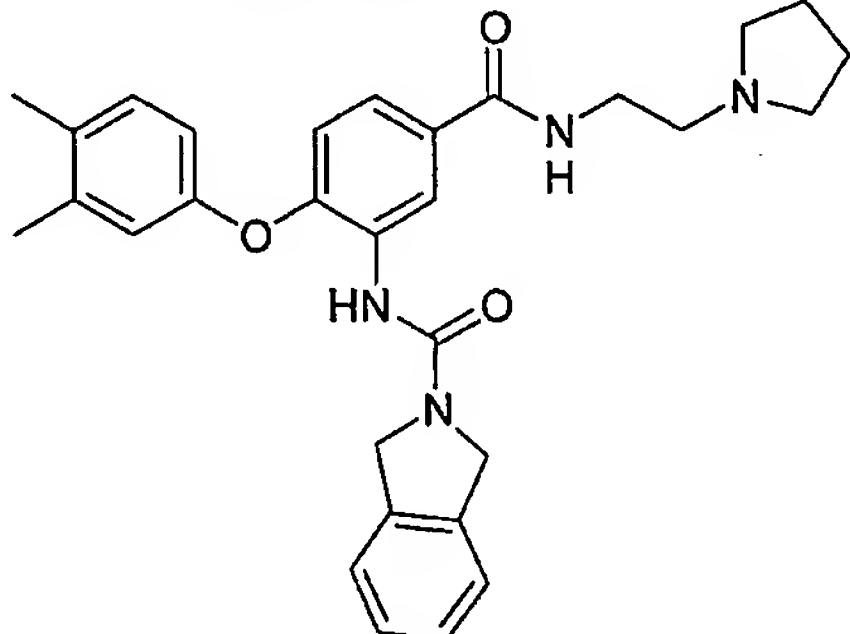
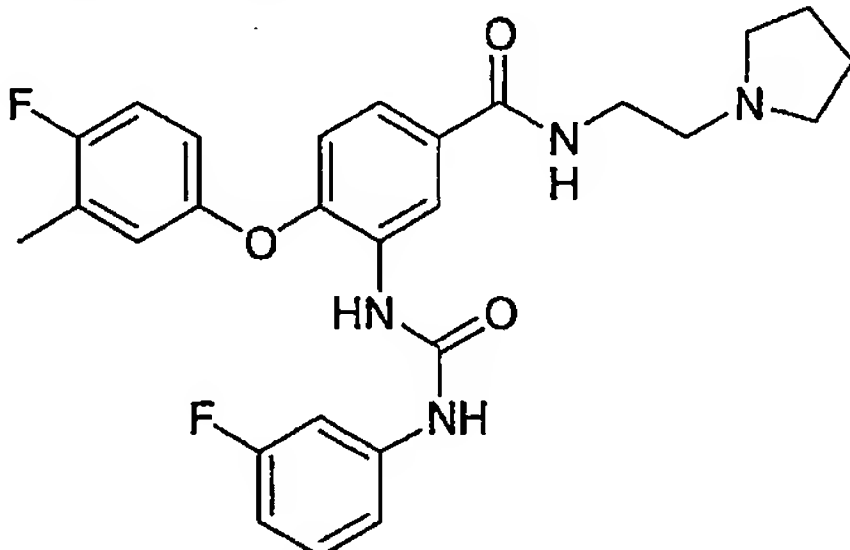
Compound No.	Structure
31	 <p>3-[3-(2,4-dichlorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 542 (M+H); MW 541</p>
32	 <p>4-(3,4-dimethylphenoxy)-3-[3-(4-phenoxyphenyl)ureido]-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 565 (M+H); MW 564</p>
33	 <p>3-(3-biphenyl-4-yl-ureido)-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 549 (M+H); MW 548</p>

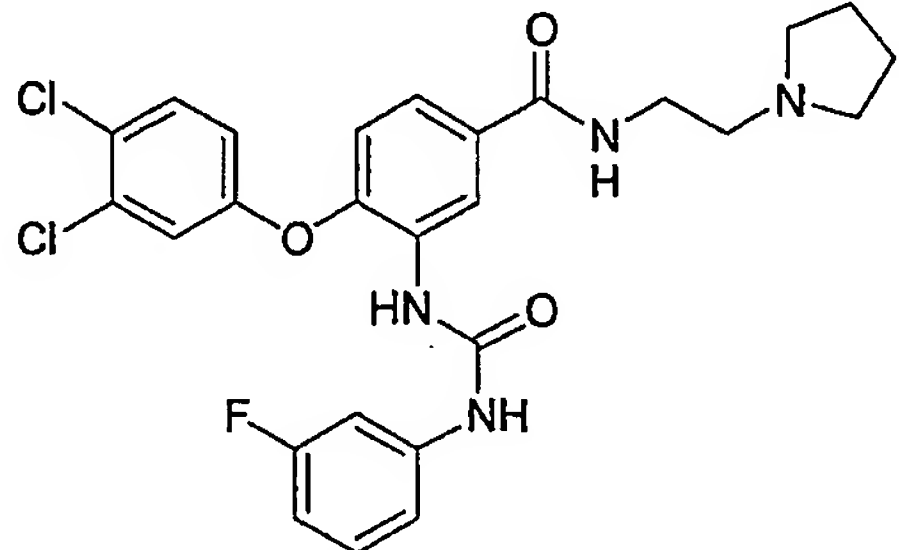
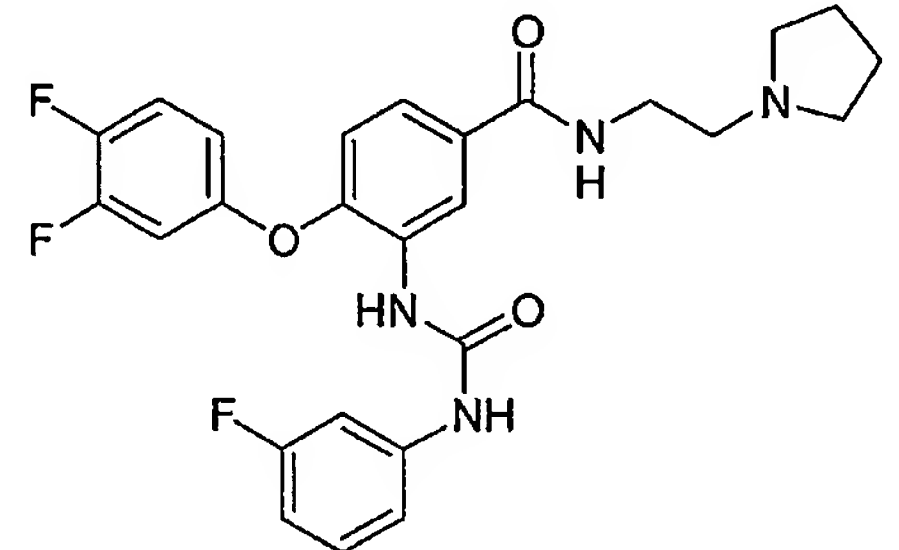
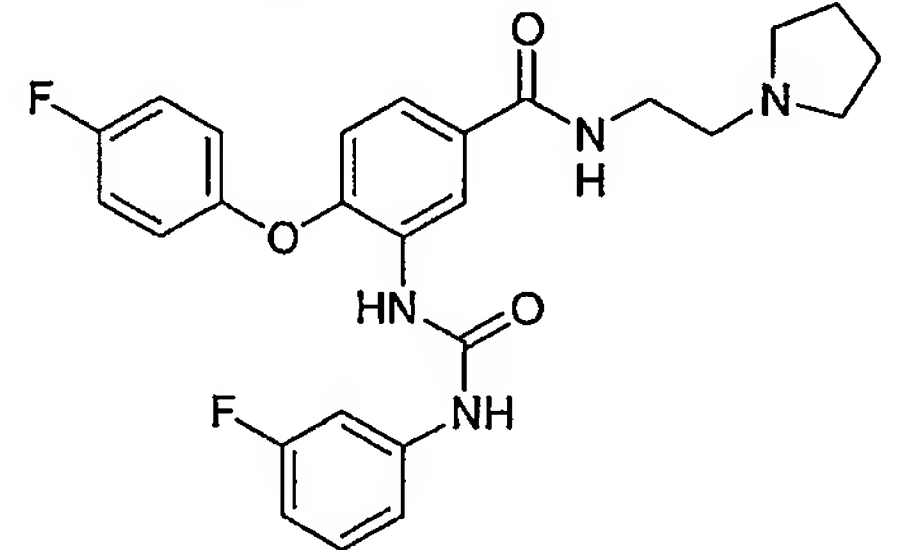


Compound No.	Structure
34	 <p>4-(3,4-dimethylphenoxy)-3-[3-(4-isopropylphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 515 (M+H); MW 514</p>
35	 <p>4-(3,4-dimethylphenoxy)-3-[3-(2,6-dimethylphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 501 (M+H); MW 500</p>
36	 <p>4-(3,4-dimethylphenoxy)-3-(3-naphthalen-1-yl-ureido)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 523 (M+H); MW 522</p>

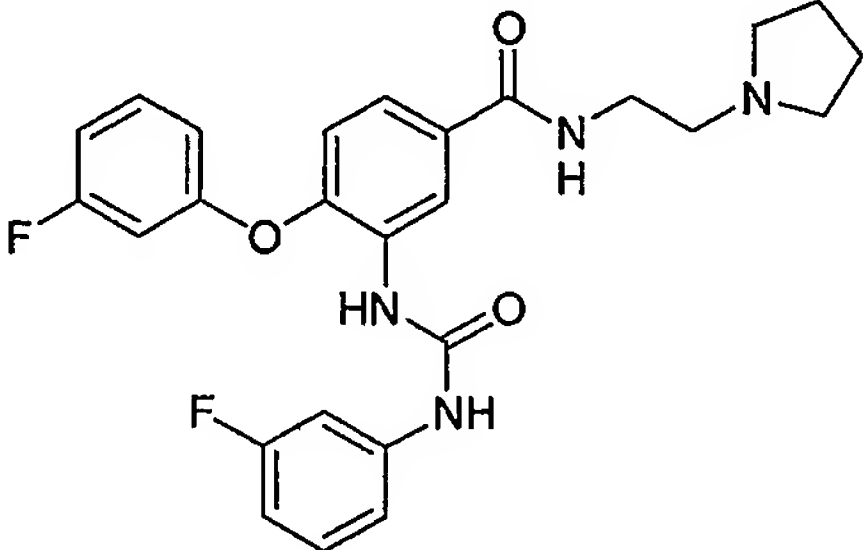
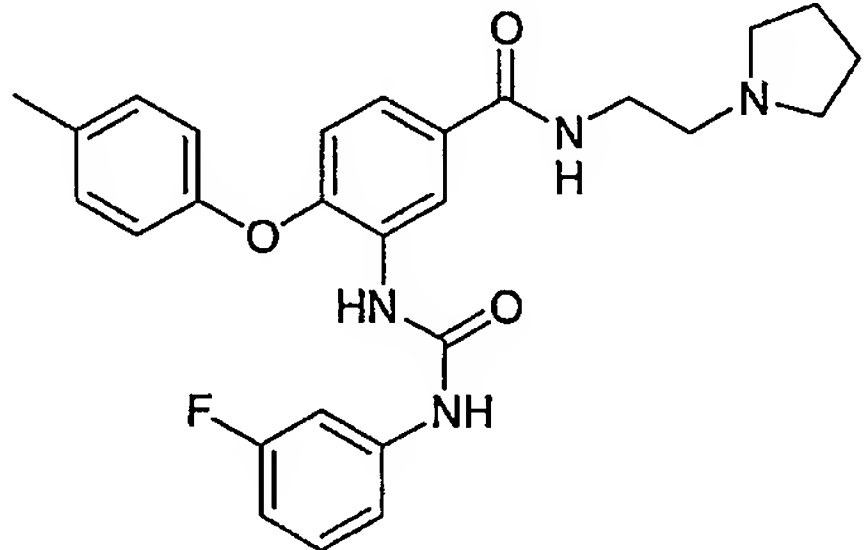
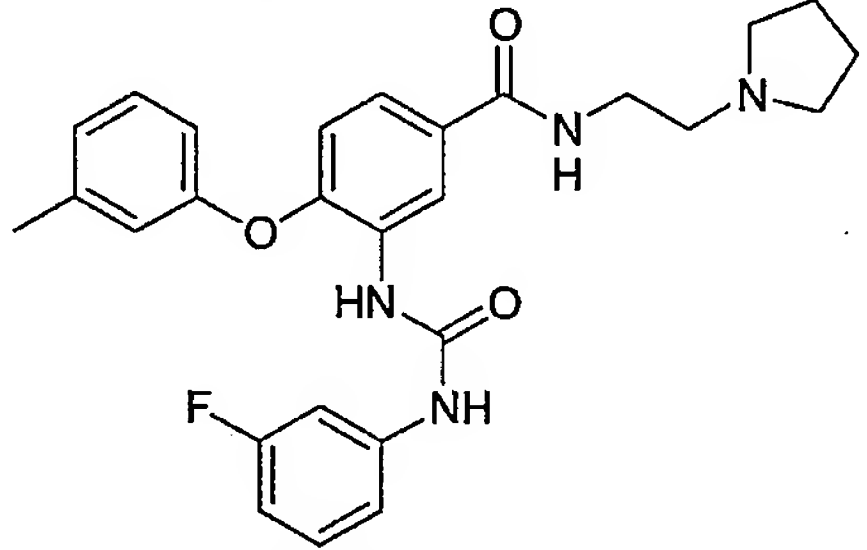
Compound No.	Structure
37	 <p>3-[3-(2,6-diisopropylphenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-ylethyl)benzamide MS <math>m/z</math> 557 (M+H); MW 556</p>
38	 <p>3-[3-(4-bromophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-ylethyl)benzamide MS <math>m/z</math> 553 (M+H); MW 552</p>
39	 <p>4-(3,4-dimethylphenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-ylethyl)benzamide MS <math>m/z</math> 491 (M+H); MW 490</p>

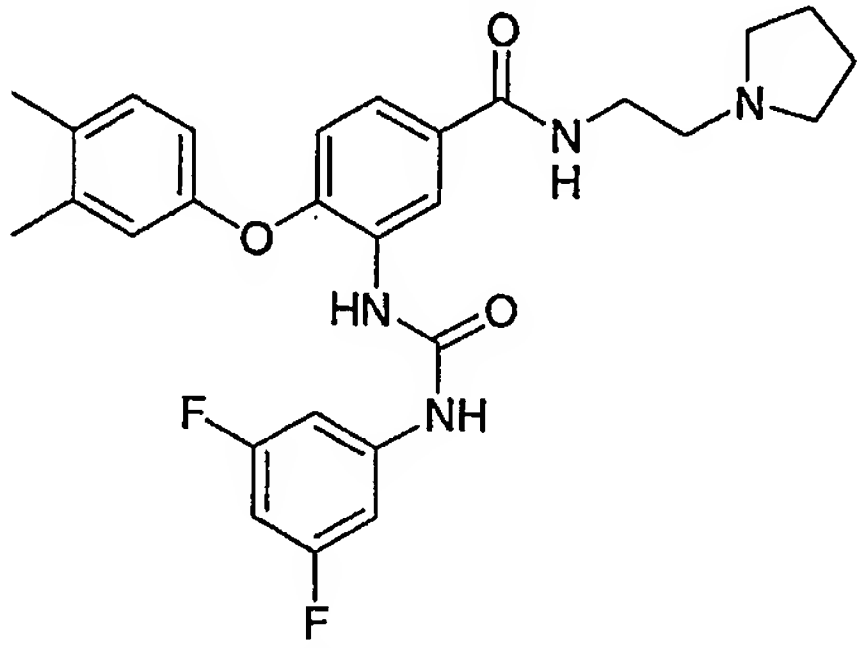
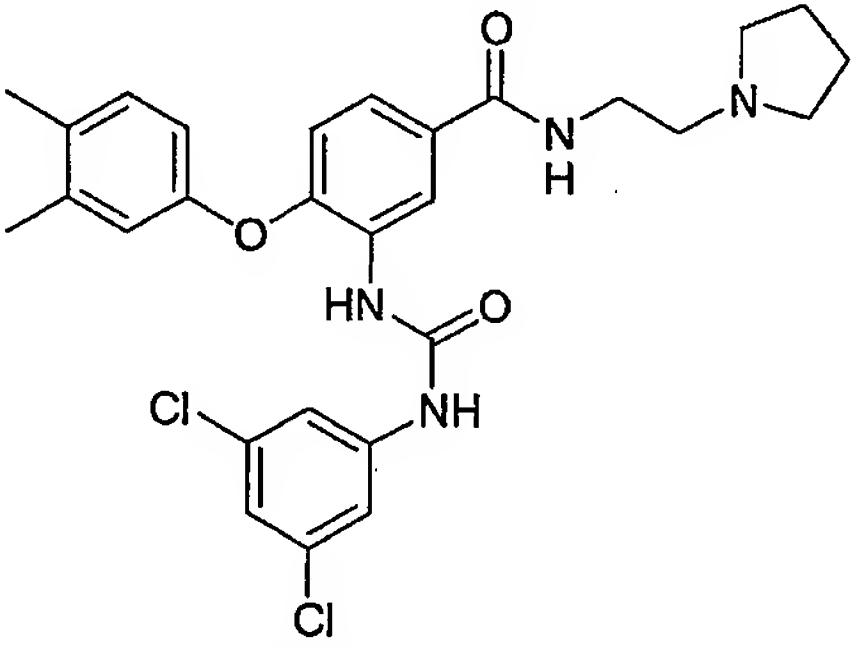
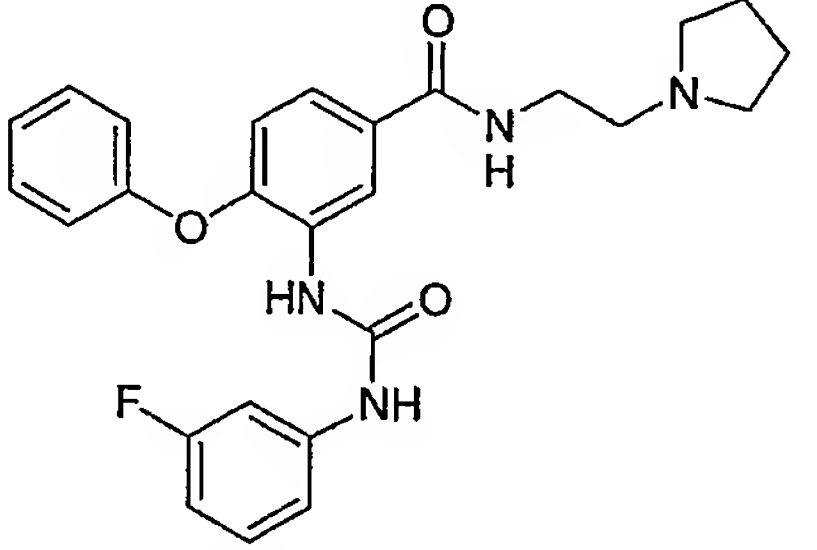
Compound No.	Structure
40	 <p>4-(3,4-dimethylphenoxy)-3-[3-(3-methoxyphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 503 (M+H); MW 502</p>
41	 <p>3-[3-(2-chlorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 507 (M+H); MW 506</p>
42	 <p>4-(3,4-dimethylphenoxy)-3-(3,3-diphenylureido)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 549 (M+H); MW 548</p>

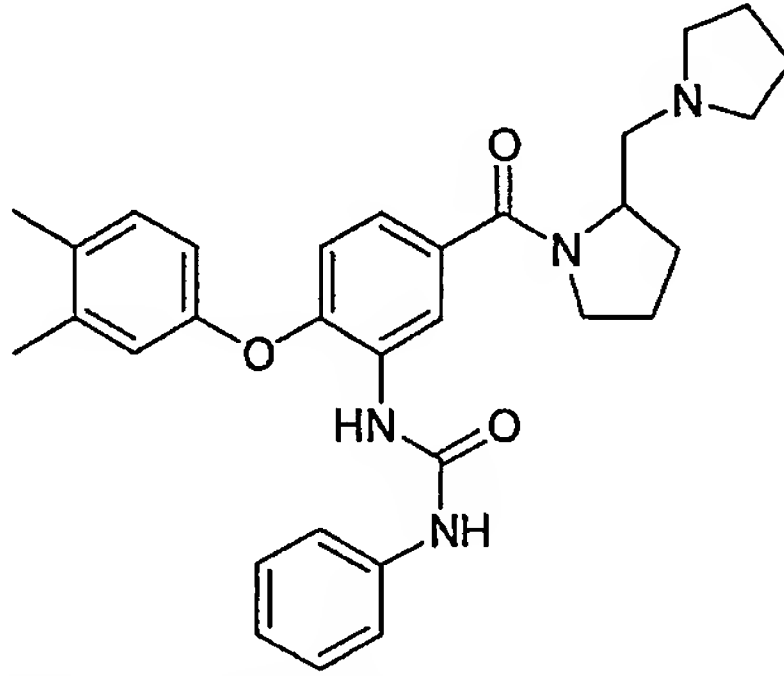
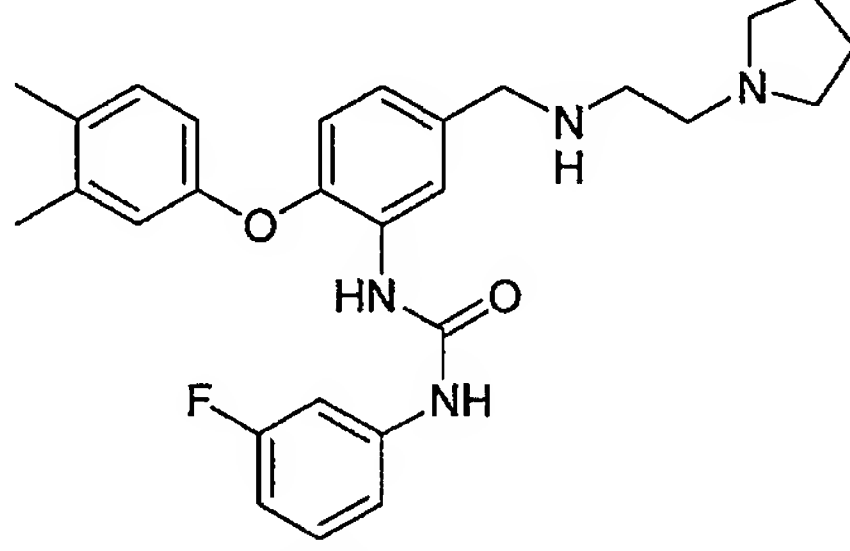
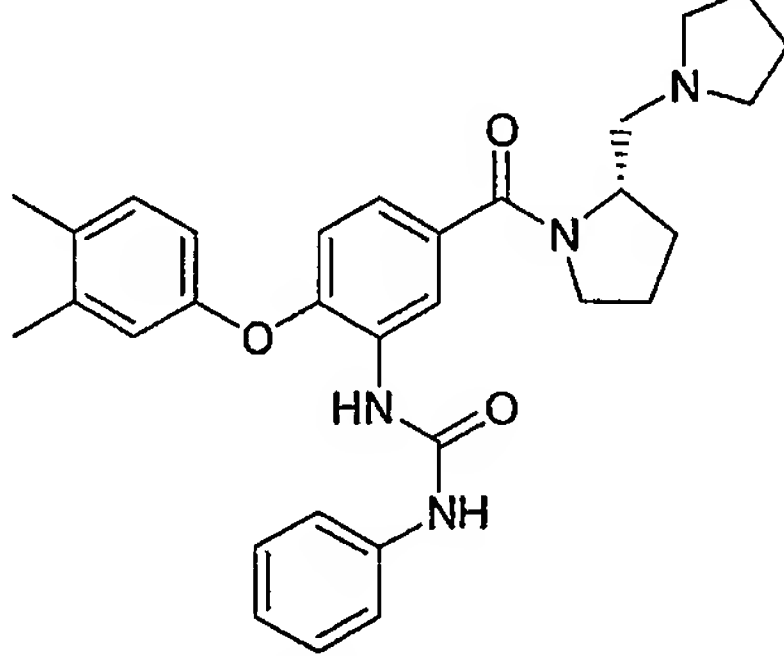
Compound No.	Structure
43	 <p>4-(3,4-dimethylphenoxy)-3-(3-methyl-3-phenylureido)-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 487 (M+H); MW 486</p>
50	 <p>1,3-dihydroisoindole-2-carboxylic acid [2-(3,4-dimethylphenoxy)-5-(2-pyrrolidin-1-ylethylcarbamoyl)phenyl]amide MS <i>m/z</i> 499 (M+H); MW 498</p>
51	 <p>4-(4-fluoro-3-methylphenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 495 (M+H); MW 494</p>

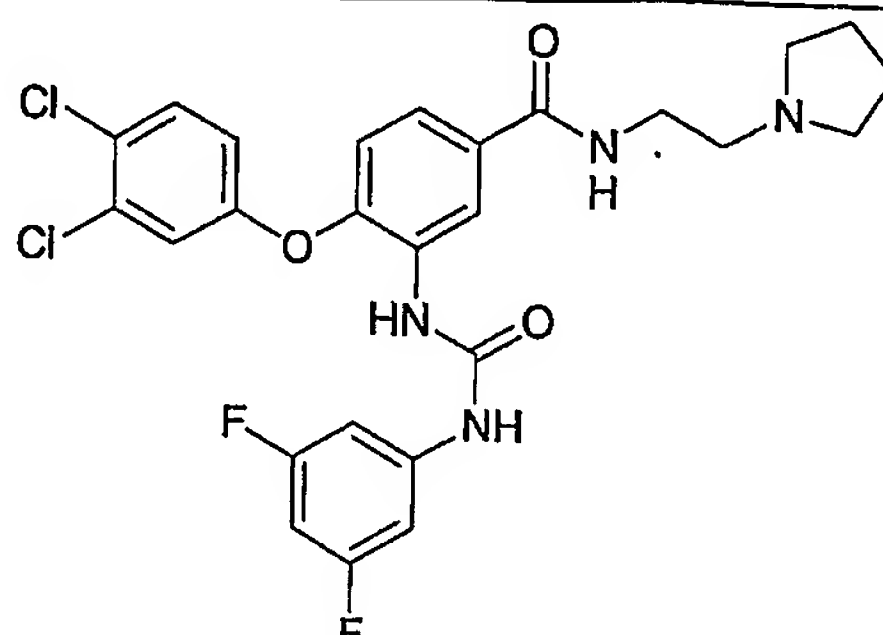
Compound No.	Structure
52	 <p>4-(3,4-dichlorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 531 (M+H); MW 530</p>
53	 <p>4-(3,4-difluorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 499 (M+H); MW 498</p>
54	 <p>4-(4-fluorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-ylethyl)benzamide MS <i>m/z</i> 481 (M+H); MW 480</p>



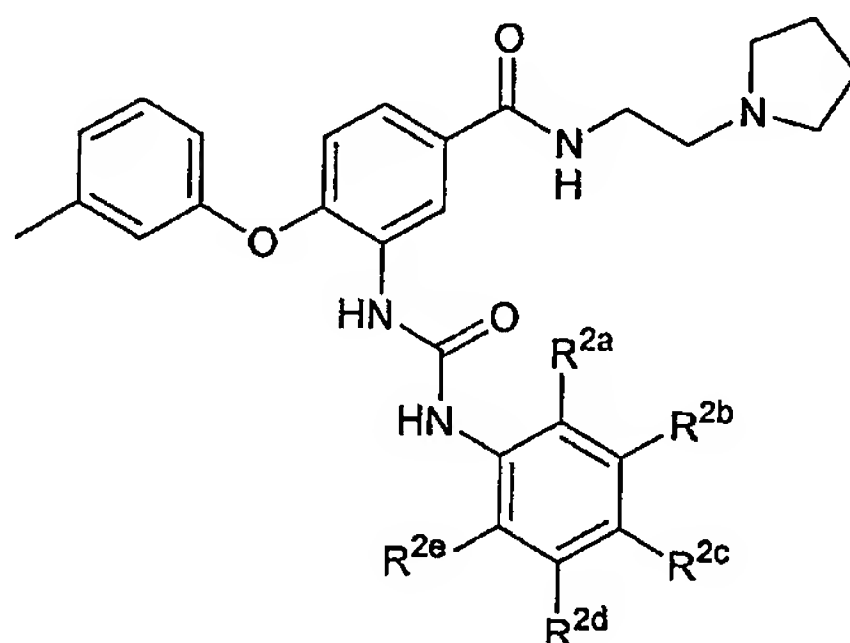
Compound No.	Structure
55	 <p>4-(3-fluorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <math>m/z</math> 481 (M+H); MW 480</p>
56	 <p>3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)-4-p-tolyloxybenzamide MS <math>m/z</math> 477 (M+H); MW 476</p>
57	 <p>3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)-4-m-tolyloxybenzamide MS <math>m/z</math> 477 (M+H); MW 476</p>

Compound No.	Structure
58	 <p>3-[3-(3,5-difluorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 509 (M+H); MW 508</p>
59	 <p>3-[3-(3,5-dichlorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 541 (M+H); MW 540</p>
61	 <p>3-[3-(3-fluorophenyl)ureido]-4-phenoxy-N-(2-pyrrolidin-1-yl-ethyl)benzamide MS <i>m/z</i> 463 (M+H); MW 462</p>

Compound No.	Structure
63	 <p>1-[2-(3,4-dimethylphenoxy)-5-(2-pyrrolidin-1-yl-methylpyrrolidine-1-carbonyl)phenyl]-3-phenylurea MS <math>m/z</math> 513 (M+H); MW 512</p>
64	 <p>1-{2-(3,4-dimethylphenoxy)-5-[(2-pyrrolidin-1-yl-ethylamino)-methyl]phenyl}-3-(3-fluorophenyl)urea MS <math>m/z</math> 477 (M+H); MW 476</p>
65	 <p>1-[2-(3,4-dimethylphenoxy)-5-(2-pyrrolidin-1-yl-methylpyrrolidine-1-carbonyl)phenyl]-3-phenylurea MS <math>m/z</math> 513 (M+H); MW 512</p>

Compound No.	Structure
66	 <p>4-(3,4-dichlorophenoxy)-3-[3-(3,5-difluorophenyl)ureido]-N-(2-pyrrolidin-1-ylethyl)benzamide MS m/z 549 (M+H); MW 548</p>

[0435] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



[0436] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

Table 2

Compound No.	$R^{2a}$	$R^{2b}$	$R^{2c}$	$R^{2d}$	$R^{2e}$
200	H	CH <sub>3</sub>	CH <sub>3</sub>	H	H
201	H	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
202	H	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
203	H	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H
204	H	CH <sub>3</sub>	CH <sub>3</sub>	Br	H
205	H	CH <sub>3</sub>	CH <sub>3</sub>	F	H
206	H	CH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
207	H	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
208	H	CH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
209	H	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
210	H	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
211	H	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
212	H	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
213	H	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
214	H	CH <sub>3</sub>	CH <sub>3</sub>	H	Cl
215	H	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
216	H	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
217	H	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
218	H	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
219	H	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl
220	H	CH <sub>3</sub>	CH <sub>3</sub>	H	Br
221	H	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
222	H	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
223	H	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
224	H	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br
225	H	CH <sub>3</sub>	CH <sub>3</sub>	F	Br
226	H	CH <sub>3</sub>	CH <sub>3</sub>	H	F
227	H	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
228	H	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
229	H	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F
230	H	CH <sub>3</sub>	CH <sub>3</sub>	Br	F
231	H	CH <sub>3</sub>	CH <sub>3</sub>	F	F
232	H	CH <sub>3</sub>	OCH <sub>3</sub>	H	H
233	H	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
234	H	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
235	H	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
236	H	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H
237	H	CH <sub>3</sub>	OCH <sub>3</sub>	F	H
238	H	CH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
239	H	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
240	H	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
241	H	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
242	H	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
243	H	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
244	H	CH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
245	H	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
246	H	CH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
247	H	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
248	H	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
249	H	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
250	H	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
251	H	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
252	H	CH <sub>3</sub>	OCH <sub>3</sub>	H	Br
253	H	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
254	H	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
255	H	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
256	H	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
257	H	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br
258	H	CH <sub>3</sub>	OCH <sub>3</sub>	H	F
259	H	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
260	H	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
261	H	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
262	H	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F
263	H	CH <sub>3</sub>	OCH <sub>3</sub>	F	F
264	H	CH <sub>3</sub>	Cl	H	H
265	H	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H
266	H	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
267	H	CH <sub>3</sub>	Cl	Cl	H
268	H	CH <sub>3</sub>	Cl	Br	H
269	H	CH <sub>3</sub>	Cl	F	H
270	H	CH <sub>3</sub>	Cl	H	CH <sub>3</sub>
271	H	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
272	H	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
273	H	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
274	H	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
275	H	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>
276	H	CH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
277	H	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
278	H	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
279	H	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
280	H	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
281	H	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
282	H	CH <sub>3</sub>	Cl	H	Cl
283	H	CH <sub>3</sub>	Cl	Cl	Cl
284	H	CH <sub>3</sub>	Cl	H	Br
285	H	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
286	H	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
287	H	CH <sub>3</sub>	Cl	Cl	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
288	H	CH <sub>3</sub>	Cl	Br	Br
289	H	CH <sub>3</sub>	Cl	F	Br
290	H	CH <sub>3</sub>	Cl	H	F
291	H	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F
292	H	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
293	H	CH <sub>3</sub>	Cl	Cl	F
294	H	CH <sub>3</sub>	Cl	F	F
295	H	CH <sub>3</sub>	Br	H	H
296	H	CH <sub>3</sub>	Br	CH <sub>3</sub>	H
297	H	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H
298	H	CH <sub>3</sub>	Br	Cl	H
299	H	CH <sub>3</sub>	Br	Br	H
300	H	CH <sub>3</sub>	Br	F	H
301	H	CH <sub>3</sub>	Br	H	CH <sub>3</sub>
302	H	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
303	H	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
304	H	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
305	H	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>
306	H	CH <sub>3</sub>	Br	F	CH <sub>3</sub>
307	H	CH <sub>3</sub>	Br	H	OCH <sub>3</sub>
308	H	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
309	H	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
310	H	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
311	H	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
312	H	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>
313	H	CH <sub>3</sub>	Br	H	Cl
314	H	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
315	H	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
316	H	CH <sub>3</sub>	Br	Cl	Cl
317	H	CH <sub>3</sub>	Br	Br	Cl
318	H	CH <sub>3</sub>	Br	F	Cl
319	H	CH <sub>3</sub>	Br	H	Br
320	H	CH <sub>3</sub>	Br	Br	Br
321	H	CH <sub>3</sub>	Br	H	F
322	H	CH <sub>3</sub>	Br	CH <sub>3</sub>	F
323	H	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F
324	H	CH <sub>3</sub>	Br	Cl	F
325	H	CH <sub>3</sub>	Br	Br	F
326	H	CH <sub>3</sub>	Br	F	F
327	H	CH <sub>3</sub>	F	H	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
328	H	CH <sub>3</sub>	F	CH <sub>3</sub>	H
329	H	CH <sub>3</sub>	F	OCH <sub>3</sub>	H
330	H	CH <sub>3</sub>	F	Cl	H
331	H	CH <sub>3</sub>	F	Br	H
332	H	CH <sub>3</sub>	F	F	H
333	H	CH <sub>3</sub>	F	H	CH <sub>3</sub>
334	H	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
335	H	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
336	H	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>
337	H	CH <sub>3</sub>	F	Br	CH <sub>3</sub>
338	H	CH <sub>3</sub>	F	F	CH <sub>3</sub>
339	H	CH <sub>3</sub>	F	H	OCH <sub>3</sub>
340	H	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
341	H	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
342	H	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
343	H	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>
344	H	CH <sub>3</sub>	F	F	OCH <sub>3</sub>
345	H	CH <sub>3</sub>	F	H	Cl
346	H	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl
347	H	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
348	H	CH <sub>3</sub>	F	Cl	Cl
349	H	CH <sub>3</sub>	F	Br	Cl
350	H	CH <sub>3</sub>	F	F	Cl
351	H	CH <sub>3</sub>	F	H	Br
352	H	CH <sub>3</sub>	F	CH <sub>3</sub>	Br
353	H	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br
354	H	CH <sub>3</sub>	F	Cl	Br
355	H	CH <sub>3</sub>	F	Br	Br
356	H	CH <sub>3</sub>	F	F	Br
357	H	CH <sub>3</sub>	F	H	F
358	H	CH <sub>3</sub>	F	F	F
359	H	OCH <sub>3</sub>	CH <sub>3</sub>	H	H
360	H	OCH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
361	H	OCH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
362	H	OCH <sub>3</sub>	CH <sub>3</sub>	H	Cl
363	H	OCH <sub>3</sub>	CH <sub>3</sub>	H	Br
364	H	OCH <sub>3</sub>	CH <sub>3</sub>	H	F
365	H	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
366	H	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
367	H	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
368	H	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
369	H	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
370	H	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
371	H	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
372	H	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
373	H	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
374	H	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
375	H	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
376	H	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H
377	H	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
378	H	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
379	H	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
380	H	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F
381	H	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H
382	H	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
383	H	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
384	H	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br
385	H	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F
386	H	OCH <sub>3</sub>	CH <sub>3</sub>	F	H
387	H	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
388	H	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl
389	H	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br
390	H	OCH <sub>3</sub>	CH <sub>3</sub>	F	F
391	H	OCH <sub>3</sub>	OCH <sub>3</sub>	H	H
392	H	OCH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
393	H	OCH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
394	H	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
395	H	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Br
396	H	OCH <sub>3</sub>	OCH <sub>3</sub>	H	F
397	H	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
398	H	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
399	H	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
400	H	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
401	H	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
402	H	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
403	H	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
404	H	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
405	H	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
406	H	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
407	H	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
408	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
409	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
410	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
411	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
412	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
413	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H
414	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
415	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
416	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
417	H	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F
418	H	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H
419	H	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
420	H	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
421	H	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br
422	H	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F
423	H	OCH <sub>3</sub>	Cl	H	H
424	H	OCH <sub>3</sub>	Cl	H	CH <sub>3</sub>
425	H	OCH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
426	H	OCH <sub>3</sub>	Cl	H	Cl
427	H	OCH <sub>3</sub>	Cl	H	Br
428	H	OCH <sub>3</sub>	Cl	H	F
429	H	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H
430	H	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
431	H	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
432	H	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
433	H	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F
434	H	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
435	H	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
436	H	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
437	H	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
438	H	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
439	H	OCH <sub>3</sub>	Cl	Cl	H
440	H	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
441	H	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
442	H	OCH <sub>3</sub>	Cl	Cl	Cl
443	H	OCH <sub>3</sub>	Cl	Cl	Br
444	H	OCH <sub>3</sub>	Cl	Cl	F
445	H	OCH <sub>3</sub>	Cl	Br	H
446	H	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
447	H	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
448	H	OCH <sub>3</sub>	Cl	Br	Br
449	H	OCH <sub>3</sub>	Cl	F	H
450	H	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>
451	H	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
452	H	OCH <sub>3</sub>	Cl	F	Br
453	H	OCH <sub>3</sub>	Cl	F	F
454	H	OCH <sub>3</sub>	Br	H	H
455	H	OCH <sub>3</sub>	Br	H	CH <sub>3</sub>
456	H	OCH <sub>3</sub>	Br	H	OCH <sub>3</sub>
457	H	OCH <sub>3</sub>	Br	H	Cl
458	H	OCH <sub>3</sub>	Br	H	Br
459	H	OCH <sub>3</sub>	Br	H	F
460	H	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H
461	H	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
462	H	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
463	H	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
464	H	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F
465	H	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H
466	H	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
467	H	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
468	H	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
469	H	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F
470	H	OCH <sub>3</sub>	Br	Cl	H
471	H	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
472	H	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
473	H	OCH <sub>3</sub>	Br	Cl	Cl
474	H	OCH <sub>3</sub>	Br	Cl	F
475	H	OCH <sub>3</sub>	Br	Br	H
476	H	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>
477	H	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
478	H	OCH <sub>3</sub>	Br	Br	Cl
479	H	OCH <sub>3</sub>	Br	Br	Br
480	H	OCH <sub>3</sub>	Br	Br	F
481	H	OCH <sub>3</sub>	Br	F	H
482	H	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>
483	H	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>
484	H	OCH <sub>3</sub>	Br	F	Cl
485	H	OCH <sub>3</sub>	Br	F	F
486	H	OCH <sub>3</sub>	F	H	H
487	H	OCH <sub>3</sub>	F	H	CH <sub>3</sub>



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
488	H	OCH <sub>3</sub>	F	H	OCH <sub>3</sub>
489	H	OCH <sub>3</sub>	F	H	Cl
490	H	OCH <sub>3</sub>	F	H	Br
491	H	OCH <sub>3</sub>	F	H	F
492	H	OCH <sub>3</sub>	F	CH <sub>3</sub>	H
493	H	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
494	H	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
495	H	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl
496	H	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br
497	H	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H
498	H	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
499	H	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
500	H	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
501	H	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br
502	H	OCH <sub>3</sub>	F	Cl	H
503	H	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>
504	H	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
505	H	OCH <sub>3</sub>	F	Cl	Cl
506	H	OCH <sub>3</sub>	F	Cl	Br
507	H	OCH <sub>3</sub>	F	Br	H
508	H	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>
509	H	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>
510	H	OCH <sub>3</sub>	F	Br	Cl
511	H	OCH <sub>3</sub>	F	Br	Br
512	H	OCH <sub>3</sub>	F	F	H
513	H	OCH <sub>3</sub>	F	F	CH <sub>3</sub>
514	H	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>
515	H	OCH <sub>3</sub>	F	F	Cl
516	H	OCH <sub>3</sub>	F	F	Br
517	H	OCH <sub>3</sub>	F	F	F
518	H	Cl	CH <sub>3</sub>	H	H
519	H	Cl	CH <sub>3</sub>	H	CH <sub>3</sub>
520	H	Cl	CH <sub>3</sub>	H	OCH <sub>3</sub>
521	H	Cl	CH <sub>3</sub>	H	Cl
522	H	Cl	CH <sub>3</sub>	H	Br
523	H	Cl	CH <sub>3</sub>	H	F
524	H	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H
525	H	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
526	H	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
527	H	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
528	H	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br
529	H	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F
530	H	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H
531	H	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
532	H	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
533	H	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br
534	H	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F
535	H	Cl	CH <sub>3</sub>	Cl	H
536	H	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
537	H	Cl	CH <sub>3</sub>	Cl	Cl
538	H	Cl	CH <sub>3</sub>	Cl	Br
539	H	Cl	CH <sub>3</sub>	Cl	F
540	H	Cl	CH <sub>3</sub>	Br	H
541	H	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>
542	H	Cl	CH <sub>3</sub>	Br	Cl
543	H	Cl	CH <sub>3</sub>	Br	Br
544	H	Cl	CH <sub>3</sub>	Br	F
545	H	Cl	CH <sub>3</sub>	F	H
546	H	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>
547	H	Cl	CH <sub>3</sub>	F	Cl
548	H	Cl	CH <sub>3</sub>	F	Br
549	H	Cl	CH <sub>3</sub>	F	F
550	H	Cl	OCH <sub>3</sub>	H	H
551	H	Cl	OCH <sub>3</sub>	H	CH <sub>3</sub>
552	H	Cl	OCH <sub>3</sub>	H	OCH <sub>3</sub>
553	H	Cl	OCH <sub>3</sub>	H	Cl
554	H	Cl	OCH <sub>3</sub>	H	Br
555	H	Cl	OCH <sub>3</sub>	H	F
556	H	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H
557	H	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
558	H	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
559	H	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br
560	H	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F
561	H	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H
562	H	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
563	H	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
564	H	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
565	H	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
566	H	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F
567	H	Cl	OCH <sub>3</sub>	Cl	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
568	H	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
569	H	Cl	OCH <sub>3</sub>	Cl	Cl
570	H	Cl	OCH <sub>3</sub>	Cl	Br
571	H	Cl	OCH <sub>3</sub>	Cl	F
572	H	Cl	OCH <sub>3</sub>	Br	H
573	H	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>
574	H	Cl	OCH <sub>3</sub>	Br	Cl
575	H	Cl	OCH <sub>3</sub>	Br	Br
576	H	Cl	OCH <sub>3</sub>	Br	F
577	H	Cl	OCH <sub>3</sub>	F	H
578	H	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>
579	H	Cl	OCH <sub>3</sub>	F	Cl
580	H	Cl	OCH <sub>3</sub>	F	Br
581	H	Cl	OCH <sub>3</sub>	F	F
582	H	Cl	Cl	H	H
583	H	Cl	Cl	H	CH <sub>3</sub>
584	H	Cl	Cl	H	OCH <sub>3</sub>
585	H	Cl	Cl	H	Cl
586	H	Cl	Cl	H	Br
587	H	Cl	Cl	H	F
588	H	Cl	Cl	CH <sub>3</sub>	H
589	H	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>
590	H	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
591	H	Cl	Cl	CH <sub>3</sub>	Br
592	H	Cl	Cl	CH <sub>3</sub>	F
593	H	Cl	Cl	OCH <sub>3</sub>	H
594	H	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
595	H	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
596	H	Cl	Cl	OCH <sub>3</sub>	Br
597	H	Cl	Cl	OCH <sub>3</sub>	F
598	H	Cl	Cl	Cl	H
599	H	Cl	Cl	Cl	CH <sub>3</sub>
600	H	Cl	Cl	Cl	OCH <sub>3</sub>
601	H	Cl	Cl	Cl	Cl
602	H	Cl	Cl	Cl	Br
603	H	Cl	Cl	Cl	F
604	H	Cl	Cl	Br	H
605	H	Cl	Cl	Br	CH <sub>3</sub>
606	H	Cl	Cl	Br	OCH <sub>3</sub>
607	H	Cl	Cl	Br	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
608	H	Cl	Cl	F	H
609	H	Cl	Cl	F	CH <sub>3</sub>
610	H	Cl	Cl	F	OCH <sub>3</sub>
611	H	Cl	Cl	F	Br
612	H	Cl	Cl	F	F
613	H	Cl	Br	H	H
614	H	Cl	Br	H	CH <sub>3</sub>
615	H	Cl	Br	H	OCH <sub>3</sub>
616	H	Cl	Br	H	Cl
617	H	Cl	Br	H	Br
618	H	Cl	Br	H	F
619	H	Cl	Br	CH <sub>3</sub>	H
620	H	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>
621	H	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>
622	H	Cl	Br	CH <sub>3</sub>	Cl
623	H	Cl	Br	CH <sub>3</sub>	F
624	H	Cl	Br	OCH <sub>3</sub>	H
625	H	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>
626	H	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
627	H	Cl	Br	OCH <sub>3</sub>	Cl
628	H	Cl	Br	OCH <sub>3</sub>	F
629	H	Cl	Br	Cl	H
630	H	Cl	Br	Cl	CH <sub>3</sub>
631	H	Cl	Br	Cl	OCH <sub>3</sub>
632	H	Cl	Br	Cl	Cl
633	H	Cl	Br	Cl	F
634	H	Cl	Br	Br	H
635	H	Cl	Br	Br	CH <sub>3</sub>
636	H	Cl	Br	Br	OCH <sub>3</sub>
637	H	Cl	Br	Br	Cl
638	H	Cl	Br	Br	Br
639	H	Cl	Br	Br	F
640	H	Cl	Br	F	H
641	H	Cl	Br	F	CH <sub>3</sub>
642	H	Cl	Br	F	OCH <sub>3</sub>
643	H	Cl	Br	F	Cl
644	H	Cl	Br	F	F
645	H	Cl	F	H	H
646	H	Cl	F	H	CH <sub>3</sub>
647	H	Cl	F	H	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
648	H	Cl	F	H	Cl
649	H	Cl	F	H	Br
650	H	Cl	F	H	F
651	H	Cl	F	CH <sub>3</sub>	H
652	H	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>
653	H	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>
654	H	Cl	F	CH <sub>3</sub>	Cl
655	H	Cl	F	CH <sub>3</sub>	Br
656	H	Cl	F	OCH <sub>3</sub>	H
657	H	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>
658	H	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>
659	H	Cl	F	OCH <sub>3</sub>	Cl
660	H	Cl	F	OCH <sub>3</sub>	Br
661	H	Cl	F	Cl	H
662	H	Cl	F	Cl	CH <sub>3</sub>
663	H	Cl	F	Cl	OCH <sub>3</sub>
664	H	Cl	F	Cl	Cl
665	H	Cl	F	Cl	Br
666	H	Cl	F	Br	H
667	H	Cl	F	Br	CH <sub>3</sub>
668	H	Cl	F	Br	OCH <sub>3</sub>
669	H	Cl	F	Br	Cl
670	H	Cl	F	Br	Br
671	H	Cl	F	F	H
672	H	Cl	F	F	CH <sub>3</sub>
673	H	Cl	F	F	OCH <sub>3</sub>
674	H	Cl	F	F	Cl
675	H	Cl	F	F	Br
676	H	Cl	F	F	F
677	H	Br	CH <sub>3</sub>	H	H
678	H	Br	CH <sub>3</sub>	H	CH <sub>3</sub>
679	H	Br	CH <sub>3</sub>	H	OCH <sub>3</sub>
680	H	Br	CH <sub>3</sub>	H	Cl
681	H	Br	CH <sub>3</sub>	H	Br
682	H	Br	CH <sub>3</sub>	H	F
683	H	Br	CH <sub>3</sub>	CH <sub>3</sub>	H
684	H	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
685	H	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
686	H	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl
687	H	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
688	H	Br	CH <sub>3</sub>	CH <sub>3</sub>	F
689	H	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H
690	H	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
691	H	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
692	H	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br
693	H	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F
694	H	Br	CH <sub>3</sub>	Cl	H
695	H	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
696	H	Br	CH <sub>3</sub>	Cl	Cl
697	H	Br	CH <sub>3</sub>	Cl	Br
698	H	Br	CH <sub>3</sub>	Cl	F
699	H	Br	CH <sub>3</sub>	Br	H
700	H	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>
701	H	Br	CH <sub>3</sub>	Br	Cl
702	H	Br	CH <sub>3</sub>	Br	Br
703	H	Br	CH <sub>3</sub>	Br	F
704	H	Br	CH <sub>3</sub>	F	H
705	H	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>
706	H	Br	CH <sub>3</sub>	F	Cl
707	H	Br	CH <sub>3</sub>	F	Br
708	H	Br	CH <sub>3</sub>	F	F
709	H	Br	OCH <sub>3</sub>	H	H
710	H	Br	OCH <sub>3</sub>	H	CH <sub>3</sub>
711	H	Br	OCH <sub>3</sub>	H	OCH <sub>3</sub>
712	H	Br	OCH <sub>3</sub>	H	Cl
713	H	Br	OCH <sub>3</sub>	H	Br
714	H	Br	OCH <sub>3</sub>	H	F
715	H	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H
716	H	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
717	H	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
718	H	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br
719	H	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F
720	H	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H
721	H	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
722	H	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
723	H	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
724	H	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
725	H	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F
726	H	Br	OCH <sub>3</sub>	Cl	H
727	H	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
728	H	Br	OCH <sub>3</sub>	Cl	Cl
729	H	Br	OCH <sub>3</sub>	Cl	Br
730	H	Br	OCH <sub>3</sub>	Cl	F
731	H	Br	OCH <sub>3</sub>	Br	H
732	H	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>
733	H	Br	OCH <sub>3</sub>	Br	Cl
734	H	Br	OCH <sub>3</sub>	Br	Br
735	H	Br	OCH <sub>3</sub>	Br	F
736	H	Br	OCH <sub>3</sub>	F	H
737	H	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>
738	H	Br	OCH <sub>3</sub>	F	Cl
739	H	Br	OCH <sub>3</sub>	F	Br
740	H	Br	OCH <sub>3</sub>	F	F
741	H	Br	Cl	H	H
742	H	Br	Cl	H	CH <sub>3</sub>
743	H	Br	Cl	H	OCH <sub>3</sub>
744	H	Br	Cl	H	Cl
745	H	Br	Cl	H	Br
746	H	Br	Cl	H	F
747	H	Br	Cl	CH <sub>3</sub>	H
748	H	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>
749	H	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
750	H	Br	Cl	CH <sub>3</sub>	Br
751	H	Br	Cl	CH <sub>3</sub>	F
752	H	Br	Cl	OCH <sub>3</sub>	H
753	H	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
754	H	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
755	H	Br	Cl	OCH <sub>3</sub>	Br
756	H	Br	Cl	OCH <sub>3</sub>	F
757	H	Br	Cl	Cl	H
758	H	Br	Cl	Cl	CH <sub>3</sub>
759	H	Br	Cl	Cl	OCH <sub>3</sub>
760	H	Br	Cl	Cl	Cl
761	H	Br	Cl	Cl	Br
762	H	Br	Cl	Cl	F
763	H	Br	Cl	Br	H
764	H	Br	Cl	Br	CH <sub>3</sub>
765	H	Br	Cl	Br	OCH <sub>3</sub>
766	H	Br	Cl	Br	Br
767	H	Br	Cl	F	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
768	H	Br	Cl	F	CH <sub>3</sub>
769	H	Br	Cl	F	OCH <sub>3</sub>
770	H	Br	Cl	F	Br
771	H	Br	Cl	F	F
772	H	Br	Br	H	H
773	H	Br	Br	H	CH <sub>3</sub>
774	H	Br	Br	H	OCH <sub>3</sub>
775	H	Br	Br	H	Cl
776	H	Br	Br	H	Br
777	H	Br	Br	H	F
778	H	Br	Br	CH <sub>3</sub>	H
779	H	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>
780	H	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>
781	H	Br	Br	CH <sub>3</sub>	Cl
782	H	Br	Br	CH <sub>3</sub>	F
783	H	Br	Br	OCH <sub>3</sub>	H
784	H	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>
785	H	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
786	H	Br	Br	OCH <sub>3</sub>	Cl
787	H	Br	Br	OCH <sub>3</sub>	F
788	H	Br	Br	Cl	H
789	H	Br	Br	Cl	CH <sub>3</sub>
790	H	Br	Br	Cl	OCH <sub>3</sub>
791	H	Br	Br	Cl	Cl
792	H	Br	Br	Cl	F
793	H	Br	Br	Br	H
794	H	Br	Br	Br	CH <sub>3</sub>
795	H	Br	Br	Br	OCH <sub>3</sub>
796	H	Br	Br	Br	Cl
797	H	Br	Br	Br	Br
798	H	Br	Br	Br	F
799	H	Br	Br	F	H
800	H	Br	Br	F	CH <sub>3</sub>
801	H	Br	Br	F	OCH <sub>3</sub>
802	H	Br	Br	F	Cl
803	H	Br	Br	F	F
804	H	Br	F	H	H
805	H	Br	F	H	CH <sub>3</sub>
806	H	Br	F	H	OCH <sub>3</sub>
807	H	Br	F	H	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
808	H	Br	F	H	Br
809	H	Br	F	H	F
810	H	Br	F	CH <sub>3</sub>	H
811	H	Br	F	CH <sub>3</sub>	CH <sub>3</sub>
812	H	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>
813	H	Br	F	CH <sub>3</sub>	Cl
814	H	Br	F	CH <sub>3</sub>	Br
815	H	Br	F	OCH <sub>3</sub>	H
816	H	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>
817	H	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>
818	H	Br	F	OCH <sub>3</sub>	Cl
819	H	Br	F	OCH <sub>3</sub>	Br
820	H	Br	F	Cl	H
821	H	Br	F	Cl	CH <sub>3</sub>
822	H	Br	F	Cl	OCH <sub>3</sub>
823	H	Br	F	Cl	Cl
824	H	Br	F	Cl	Br
825	H	Br	F	Br	H
826	H	Br	F	Br	CH <sub>3</sub>
827	H	Br	F	Br	OCH <sub>3</sub>
828	H	Br	F	Br	Cl
829	H	Br	F	Br	Br
830	H	Br	F	F	H
831	H	Br	F	F	CH <sub>3</sub>
832	H	Br	F	F	OCH <sub>3</sub>
833	H	Br	F	F	Cl
834	H	Br	F	F	Br
835	H	Br	F	F	F
836	H	F	CH <sub>3</sub>	H	H
837	H	F	CH <sub>3</sub>	H	CH <sub>3</sub>
838	H	F	CH <sub>3</sub>	H	OCH <sub>3</sub>
839	H	F	CH <sub>3</sub>	H	Cl
840	H	F	CH <sub>3</sub>	H	Br
841	H	F	CH <sub>3</sub>	H	F
842	H	F	CH <sub>3</sub>	CH <sub>3</sub>	H
843	H	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
844	H	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
845	H	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl
846	H	F	CH <sub>3</sub>	CH <sub>3</sub>	Br
847	H	F	CH <sub>3</sub>	CH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
848	H	F	CH <sub>3</sub>	OCH <sub>3</sub>	H
849	H	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
850	H	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
851	H	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br
852	H	F	CH <sub>3</sub>	OCH <sub>3</sub>	F
853	H	F	CH <sub>3</sub>	Cl	H
854	H	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
855	H	F	CH <sub>3</sub>	Cl	Cl
856	H	F	CH <sub>3</sub>	Cl	Br
857	H	F	CH <sub>3</sub>	Cl	F
858	H	F	CH <sub>3</sub>	Br	H
859	H	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>
860	H	F	CH <sub>3</sub>	Br	Cl
861	H	F	CH <sub>3</sub>	Br	Br
862	H	F	CH <sub>3</sub>	Br	F
863	H	F	CH <sub>3</sub>	F	H
864	H	F	CH <sub>3</sub>	F	OCH <sub>3</sub>
865	H	F	CH <sub>3</sub>	F	Cl
866	H	F	CH <sub>3</sub>	F	Br
867	H	F	CH <sub>3</sub>	F	F
868	H	F	OCH <sub>3</sub>	H	H
869	H	F	OCH <sub>3</sub>	H	CH <sub>3</sub>
870	H	F	OCH <sub>3</sub>	H	OCH <sub>3</sub>
871	H	F	OCH <sub>3</sub>	H	Cl
872	H	F	OCH <sub>3</sub>	H	Br
873	H	F	OCH <sub>3</sub>	H	F
874	H	F	OCH <sub>3</sub>	CH <sub>3</sub>	H
875	H	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
876	H	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
877	H	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br
878	H	F	OCH <sub>3</sub>	CH <sub>3</sub>	F
879	H	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H
880	H	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
881	H	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
882	H	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
883	H	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
884	H	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F
885	H	F	OCH <sub>3</sub>	Cl	H
886	H	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
887	H	F	OCH <sub>3</sub>	Cl	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
888	H	F	OCH <sub>3</sub>	Cl	Br
889	H	F	OCH <sub>3</sub>	Cl	F
890	H	F	OCH <sub>3</sub>	Br	H
891	H	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>
892	H	F	OCH <sub>3</sub>	Br	Cl
893	H	F	OCH <sub>3</sub>	Br	Br
894	H	F	OCH <sub>3</sub>	Br	F
895	H	F	OCH <sub>3</sub>	F	H
896	H	F	OCH <sub>3</sub>	F	CH <sub>3</sub>
897	H	F	OCH <sub>3</sub>	F	Cl
898	H	F	OCH <sub>3</sub>	F	Br
899	H	F	OCH <sub>3</sub>	F	F
900	H	F	Cl	H	H
901	H	F	Cl	H	CH <sub>3</sub>
902	H	F	Cl	H	OCH <sub>3</sub>
903	H	F	Cl	H	Cl
904	H	F	Cl	H	Br
905	H	F	Cl	H	F
906	H	F	Cl	CH <sub>3</sub>	H
907	H	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>
908	H	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
909	H	F	Cl	CH <sub>3</sub>	Br
910	H	F	Cl	CH <sub>3</sub>	F
911	H	F	Cl	OCH <sub>3</sub>	H
912	H	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
913	H	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
914	H	F	Cl	OCH <sub>3</sub>	Br
915	H	F	Cl	OCH <sub>3</sub>	F
916	H	F	Cl	Cl	H
917	H	F	Cl	Cl	CH <sub>3</sub>
918	H	F	Cl	Cl	OCH <sub>3</sub>
919	H	F	Cl	Cl	Cl
920	H	F	Cl	Cl	Br
921	H	F	Cl	Cl	F
922	H	F	Cl	Br	H
923	H	F	Cl	Br	CH <sub>3</sub>
924	H	F	Cl	Br	OCH <sub>3</sub>
925	H	F	Cl	Br	Br
926	H	F	Cl	F	H
927	H	F	Cl	F	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
928	H	F	Cl	F	OCH <sub>3</sub>
929	H	F	Cl	F	Br
930	H	F	Cl	F	F
931	H	F	Br	H	H
932	H	F	Br	H	CH <sub>3</sub>
933	H	F	Br	H	OCH <sub>3</sub>
934	H	F	Br	H	Cl
935	H	F	Br	H	Br
936	H	F	Br	H	F
937	H	F	Br	CH <sub>3</sub>	H
938	H	F	Br	CH <sub>3</sub>	CH <sub>3</sub>
939	H	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>
940	H	F	Br	CH <sub>3</sub>	Cl
941	H	F	Br	CH <sub>3</sub>	F
942	H	F	Br	OCH <sub>3</sub>	H
943	H	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>
944	H	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
945	H	F	Br	OCH <sub>3</sub>	Cl
946	H	F	Br	OCH <sub>3</sub>	F
947	H	F	Br	Cl	H
948	H	F	Br	Cl	CH <sub>3</sub>
949	H	F	Br	Cl	OCH <sub>3</sub>
950	H	F	Br	Cl	Cl
951	H	F	Br	Cl	F
952	H	F	Br	Br	H
953	H	F	Br	Br	CH <sub>3</sub>
954	H	F	Br	Br	OCH <sub>3</sub>
955	H	F	Br	Br	Cl
956	H	F	Br	Br	Br
957	H	F	Br	Br	F
958	H	F	Br	F	H
959	H	F	Br	F	CH <sub>3</sub>
960	H	F	Br	F	OCH <sub>3</sub>
961	H	F	Br	F	Cl
962	H	F	Br	F	F
963	H	F	F	H	H
964	H	F	F	H	CH <sub>3</sub>
965	H	F	F	H	OCH <sub>3</sub>
966	H	F	F	H	Cl
967	H	F	F	H	Br



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
968	H	F	F	H	F
969	H	F	F	CH <sub>3</sub>	H
970	H	F	F	CH <sub>3</sub>	CH <sub>3</sub>
971	H	F	F	CH <sub>3</sub>	OCH <sub>3</sub>
972	H	F	F	CH <sub>3</sub>	Cl
973	H	F	F	CH <sub>3</sub>	Br
974	H	F	F	OCH <sub>3</sub>	H
975	H	F	F	OCH <sub>3</sub>	CH <sub>3</sub>
976	H	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>
977	H	F	F	OCH <sub>3</sub>	Cl
978	H	F	F	OCH <sub>3</sub>	Br
979	H	F	F	Cl	H
980	H	F	F	Cl	CH <sub>3</sub>
981	H	F	F	Cl	OCH <sub>3</sub>
982	H	F	F	Cl	Cl
983	H	F	F	Cl	Br
984	H	F	F	Br	H
985	H	F	F	Br	CH <sub>3</sub>
986	H	F	F	Br	OCH <sub>3</sub>
987	H	F	F	Br	Cl
988	H	F	F	Br	Br
989	H	F	F	F	H
990	H	F	F	F	CH <sub>3</sub>
991	H	F	F	F	OCH <sub>3</sub>
992	H	F	F	F	Cl
993	H	F	F	F	Br
994	H	F	F	F	F
995	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	H
996	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
997	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
998	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H
999	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	H
1000	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	H
1001	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
1002	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1003	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
1004	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
1005	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1006	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
1007	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1008	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
1009	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	Cl
1010	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
1011	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
1012	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
1013	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
1014	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl
1015	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	Br
1016	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
1017	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
1018	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
1019	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br
1020	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	Br
1021	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	F
1022	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
1023	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
1024	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F
1025	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	F
1026	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	F
1027	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	H
1028	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
1029	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
1030	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
1031	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H
1032	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	H
1033	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
1034	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1035	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
1036	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
1037	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
1038	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
1039	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
1040	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1041	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
1042	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
1043	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
1044	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
1045	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
1046	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
1047	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1048	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
1049	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
1050	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
1051	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
1052	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br
1053	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	F
1054	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
1055	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
1056	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
1057	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F
1058	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	F
1059	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H	H
1060	CH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H
1061	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
1062	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	H
1063	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	H
1064	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F	H
1065	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H	CH <sub>3</sub>
1066	CH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
1067	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
1068	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
1069	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
1070	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>
1071	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
1072	CH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
1073	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
1074	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
1075	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
1076	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
1077	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H	Cl
1078	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	Cl
1079	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H	Br
1080	CH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
1081	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
1082	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	Br
1083	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	Br
1084	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F	Br
1085	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H	F
1086	CH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F
1087	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1088	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	F
1089	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F	F
1090	CH <sub>3</sub>	CH <sub>3</sub>	Br	H	H
1091	CH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	H
1092	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H
1093	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	H
1094	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br	H
1095	CH <sub>3</sub>	CH <sub>3</sub>	Br	F	H
1096	CH <sub>3</sub>	CH <sub>3</sub>	Br	H	CH <sub>3</sub>
1097	CH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
1098	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
1099	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
1100	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>
1101	CH <sub>3</sub>	CH <sub>3</sub>	Br	F	CH <sub>3</sub>
1102	CH <sub>3</sub>	CH <sub>3</sub>	Br	H	OCH <sub>3</sub>
1103	CH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
1104	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
1105	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
1106	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
1107	CH <sub>3</sub>	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>
1108	CH <sub>3</sub>	CH <sub>3</sub>	Br	H	Cl
1109	CH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
1110	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
1111	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	Cl
1112	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br	Cl
1113	CH <sub>3</sub>	CH <sub>3</sub>	Br	F	Cl
1114	CH <sub>3</sub>	CH <sub>3</sub>	Br	H	Br
1115	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br	Br
1116	CH <sub>3</sub>	CH <sub>3</sub>	Br	H	F
1117	CH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	F
1118	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F
1119	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	F
1120	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br	F
1121	CH <sub>3</sub>	CH <sub>3</sub>	Br	F	F
1122	CH <sub>3</sub>	CH <sub>3</sub>	F	H	H
1123	CH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	H
1124	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	H
1125	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl	H
1126	CH <sub>3</sub>	CH <sub>3</sub>	F	Br	H
1127	CH <sub>3</sub>	CH <sub>3</sub>	F	F	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1128	CH <sub>3</sub>	CH <sub>3</sub>	F	H	CH <sub>3</sub>
1129	CH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
1130	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
1131	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>
1132	CH <sub>3</sub>	CH <sub>3</sub>	F	Br	CH <sub>3</sub>
1133	CH <sub>3</sub>	CH <sub>3</sub>	F	F	CH <sub>3</sub>
1134	CH <sub>3</sub>	CH <sub>3</sub>	F	H	OCH <sub>3</sub>
1135	CH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
1136	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
1137	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
1138	CH <sub>3</sub>	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>
1139	CH <sub>3</sub>	CH <sub>3</sub>	F	F	OCH <sub>3</sub>
1140	CH <sub>3</sub>	CH <sub>3</sub>	F	H	Cl
1141	CH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl
1142	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
1143	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl	Cl
1144	CH <sub>3</sub>	CH <sub>3</sub>	F	Br	Cl
1145	CH <sub>3</sub>	CH <sub>3</sub>	F	F	Cl
1146	CH <sub>3</sub>	CH <sub>3</sub>	F	H	Br
1147	CH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	Br
1148	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br
1149	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl	Br
1150	CH <sub>3</sub>	CH <sub>3</sub>	F	Br	Br
1151	CH <sub>3</sub>	CH <sub>3</sub>	F	F	Br
1152	CH <sub>3</sub>	CH <sub>3</sub>	F	H	F
1153	CH <sub>3</sub>	CH <sub>3</sub>	F	F	F
1154	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	H
1155	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
1156	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
1157	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	Cl
1158	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	Br
1159	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	F
1160	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
1161	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1162	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
1163	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
1164	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
1165	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
1166	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
1167	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1168	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
1169	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
1170	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
1171	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H
1172	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
1173	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
1174	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
1175	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F
1176	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H
1177	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
1178	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
1179	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br
1180	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F
1181	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	H
1182	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
1183	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl
1184	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br
1185	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	F
1186	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	H
1187	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
1188	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
1189	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
1190	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Br
1191	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	F
1192	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
1193	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1194	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
1195	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
1196	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
1197	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
1198	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
1199	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1200	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
1201	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
1202	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
1203	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
1204	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
1205	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
1206	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
1207	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1208	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H
1209	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
1210	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
1211	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
1212	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F
1213	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H
1214	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
1215	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
1216	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br
1217	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F
1218	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	H
1219	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	CH <sub>3</sub>
1220	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
1221	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	Cl
1222	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	Br
1223	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	F
1224	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H
1225	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
1226	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
1227	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
1228	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F
1229	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
1230	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
1231	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
1232	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
1233	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
1234	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	H
1235	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
1236	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
1237	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	Cl
1238	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	Br
1239	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	F
1240	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	H
1241	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
1242	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
1243	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	Br
1244	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	H
1245	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>
1246	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
1247	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1248	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	F
1249	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H	H
1250	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H	CH <sub>3</sub>
1251	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H	OCH <sub>3</sub>
1252	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H	Cl
1253	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H	Br
1254	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H	F
1255	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H
1256	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
1257	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
1258	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
1259	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F
1260	CH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H
1261	CH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
1262	CH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
1263	CH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
1264	CH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F
1265	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	H
1266	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
1267	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
1268	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	Cl
1269	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	F
1270	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	H
1271	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>
1272	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
1273	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	Cl
1274	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	Br
1275	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	F
1276	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F	H
1277	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>
1278	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>
1279	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F	Cl
1280	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F	F
1281	CH <sub>3</sub>	OCH <sub>3</sub>	F	H	H
1282	CH <sub>3</sub>	OCH <sub>3</sub>	F	H	CH <sub>3</sub>
1283	CH <sub>3</sub>	OCH <sub>3</sub>	F	H	OCH <sub>3</sub>
1284	CH <sub>3</sub>	OCH <sub>3</sub>	F	H	Cl
1285	CH <sub>3</sub>	OCH <sub>3</sub>	F	H	Br
1286	CH <sub>3</sub>	OCH <sub>3</sub>	F	H	F
1287	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1288	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
1289	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
1290	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl
1291	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br
1292	CH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H
1293	CH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
1294	CH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
1295	CH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
1296	CH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br
1297	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	H
1298	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>
1299	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
1300	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	Cl
1301	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	Br
1302	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br	H
1303	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>
1304	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>
1305	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br	Cl
1306	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br	Br
1307	CH <sub>3</sub>	OCH <sub>3</sub>	F	F	H
1308	CH <sub>3</sub>	OCH <sub>3</sub>	F	F	CH <sub>3</sub>
1309	CH <sub>3</sub>	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>
1310	CH <sub>3</sub>	OCH <sub>3</sub>	F	F	Cl
1311	CH <sub>3</sub>	OCH <sub>3</sub>	F	F	Br
1312	CH <sub>3</sub>	OCH <sub>3</sub>	F	F	F
1313	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H	H
1314	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H	CH <sub>3</sub>
1315	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H	OCH <sub>3</sub>
1316	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H	Cl
1317	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H	Br
1318	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H	F
1319	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H
1320	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1321	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
1322	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl
1323	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br
1324	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F
1325	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H
1326	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1327	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1328	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br
1329	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F
1330	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	H
1331	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
1332	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	Cl
1333	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	Br
1334	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	F
1335	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	H
1336	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>
1337	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	Cl
1338	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	Br
1339	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	F
1340	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F	H
1341	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>
1342	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F	Cl
1343	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F	Br
1344	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F	F
1345	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	H
1346	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	CH <sub>3</sub>
1347	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	OCH <sub>3</sub>
1348	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	Cl
1349	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	Br
1350	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	F
1351	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H
1352	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1353	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
1354	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br
1355	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F
1356	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H
1357	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
1358	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1359	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
1360	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
1361	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F
1362	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	H
1363	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
1364	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	Cl
1365	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	Br
1366	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	F
1367	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1368	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>
1369	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	Cl
1370	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	Br
1371	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	F
1372	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	H
1373	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>
1374	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	Cl
1375	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	Br
1376	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	F
1377	CH <sub>3</sub>	Cl	Cl	H	H
1378	CH <sub>3</sub>	Cl	Cl	H	CH <sub>3</sub>
1379	CH <sub>3</sub>	Cl	Cl	H	OCH <sub>3</sub>
1380	CH <sub>3</sub>	Cl	Cl	H	Cl
1381	CH <sub>3</sub>	Cl	Cl	H	Br
1382	CH <sub>3</sub>	Cl	Cl	H	F
1383	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	H
1384	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>
1385	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
1386	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	Br
1387	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	F
1388	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	H
1389	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
1390	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
1391	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	Br
1392	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	F
1393	CH <sub>3</sub>	Cl	Cl	Cl	H
1394	CH <sub>3</sub>	Cl	Cl	Cl	CH <sub>3</sub>
1395	CH <sub>3</sub>	Cl	Cl	Cl	OCH <sub>3</sub>
1396	CH <sub>3</sub>	Cl	Cl	Cl	Cl
1397	CH <sub>3</sub>	Cl	Cl	Cl	Br
1398	CH <sub>3</sub>	Cl	Cl	Cl	F
1399	CH <sub>3</sub>	Cl	Cl	Br	H
1400	CH <sub>3</sub>	Cl	Cl	Br	CH <sub>3</sub>
1401	CH <sub>3</sub>	Cl	Cl	Br	OCH <sub>3</sub>
1402	CH <sub>3</sub>	Cl	Cl	Br	Br
1403	CH <sub>3</sub>	Cl	Cl	F	H
1404	CH <sub>3</sub>	Cl	Cl	F	CH <sub>3</sub>
1405	CH <sub>3</sub>	Cl	Cl	F	OCH <sub>3</sub>
1406	CH <sub>3</sub>	Cl	Cl	F	Br
1407	CH <sub>3</sub>	Cl	Cl	F	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1408	CH <sub>3</sub>	Cl	Br	H	H
1409	CH <sub>3</sub>	Cl	Br	H	CH <sub>3</sub>
1410	CH <sub>3</sub>	Cl	Br	H	OCH <sub>3</sub>
1411	CH <sub>3</sub>	Cl	Br	H	Cl
1412	CH <sub>3</sub>	Cl	Br	H	Br
1413	CH <sub>3</sub>	Cl	Br	H	F
1414	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	H
1415	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>
1416	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>
1417	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	Cl
1418	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	F
1419	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	H
1420	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>
1421	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
1422	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	Cl
1423	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	F
1424	CH <sub>3</sub>	Cl	Br	Cl	H
1425	CH <sub>3</sub>	Cl	Br	Cl	CH <sub>3</sub>
1426	CH <sub>3</sub>	Cl	Br	Cl	OCH <sub>3</sub>
1427	CH <sub>3</sub>	Cl	Br	Cl	Cl
1428	CH <sub>3</sub>	Cl	Br	Cl	F
1429	CH <sub>3</sub>	Cl	Br	Br	H
1430	CH <sub>3</sub>	Cl	Br	Br	CH <sub>3</sub>
1431	CH <sub>3</sub>	Cl	Br	Br	OCH <sub>3</sub>
1432	CH <sub>3</sub>	Cl	Br	Br	Cl
1433	CH <sub>3</sub>	Cl	Br	Br	Br
1434	CH <sub>3</sub>	Cl	Br	Br	F
1435	CH <sub>3</sub>	Cl	Br	F	H
1436	CH <sub>3</sub>	Cl	Br	F	CH <sub>3</sub>
1437	CH <sub>3</sub>	Cl	Br	F	OCH <sub>3</sub>
1438	CH <sub>3</sub>	Cl	Br	F	Cl
1439	CH <sub>3</sub>	Cl	Br	F	F
1440	CH <sub>3</sub>	Cl	F	H	H
1441	CH <sub>3</sub>	Cl	F	H	CH <sub>3</sub>
1442	CH <sub>3</sub>	Cl	F	H	OCH <sub>3</sub>
1443	CH <sub>3</sub>	Cl	F	H	Cl
1444	CH <sub>3</sub>	Cl	F	H	Br
1445	CH <sub>3</sub>	Cl	F	H	F
1446	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>	H
1447	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1448	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>
1449	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>	Cl
1450	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>	Br
1451	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	H
1452	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>
1453	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>
1454	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	Cl
1455	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	Br
1456	CH <sub>3</sub>	Cl	F	Cl	H
1457	CH <sub>3</sub>	Cl	F	Cl	CH <sub>3</sub>
1458	CH <sub>3</sub>	Cl	F	Cl	OCH <sub>3</sub>
1459	CH <sub>3</sub>	Cl	F	Cl	Cl
1460	CH <sub>3</sub>	Cl	F	Cl	Br
1461	CH <sub>3</sub>	Cl	F	Br	H
1462	CH <sub>3</sub>	Cl	F	Br	CH <sub>3</sub>
1463	CH <sub>3</sub>	Cl	F	Br	OCH <sub>3</sub>
1464	CH <sub>3</sub>	Cl	F	Br	Cl
1465	CH <sub>3</sub>	Cl	F	Br	Br
1466	CH <sub>3</sub>	Cl	F	F	H
1467	CH <sub>3</sub>	Cl	F	F	CH <sub>3</sub>
1468	CH <sub>3</sub>	Cl	F	F	OCH <sub>3</sub>
1469	CH <sub>3</sub>	Cl	F	F	Cl
1470	CH <sub>3</sub>	Cl	F	F	Br
1471	CH <sub>3</sub>	Cl	F	F	F
1472	CH <sub>3</sub>	Br	CH <sub>3</sub>	H	H
1473	CH <sub>3</sub>	Br	CH <sub>3</sub>	H	CH <sub>3</sub>
1474	CH <sub>3</sub>	Br	CH <sub>3</sub>	H	OCH <sub>3</sub>
1475	CH <sub>3</sub>	Br	CH <sub>3</sub>	H	Cl
1476	CH <sub>3</sub>	Br	CH <sub>3</sub>	H	Br
1477	CH <sub>3</sub>	Br	CH <sub>3</sub>	H	F
1478	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	H
1479	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1480	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
1481	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl
1482	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br
1483	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	F
1484	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H
1485	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1486	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
1487	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1488	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F
1489	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	H
1490	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
1491	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	Cl
1492	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	Br
1493	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	F
1494	CH <sub>3</sub>	Br	CH <sub>3</sub>	Br	H
1495	CH <sub>3</sub>	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>
1496	CH <sub>3</sub>	Br	CH <sub>3</sub>	Br	Cl
1497	CH <sub>3</sub>	Br	CH <sub>3</sub>	Br	Br
1498	CH <sub>3</sub>	Br	CH <sub>3</sub>	Br	F
1499	CH <sub>3</sub>	Br	CH <sub>3</sub>	F	H
1500	CH <sub>3</sub>	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>
1501	CH <sub>3</sub>	Br	CH <sub>3</sub>	F	Cl
1502	CH <sub>3</sub>	Br	CH <sub>3</sub>	F	Br
1503	CH <sub>3</sub>	Br	CH <sub>3</sub>	F	F
1504	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H	H
1505	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H	CH <sub>3</sub>
1506	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H	OCH <sub>3</sub>
1507	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H	Cl
1508	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H	Br
1509	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H	F
1510	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H
1511	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1512	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
1513	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br
1514	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F
1515	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H
1516	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
1517	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1518	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
1519	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
1520	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F
1521	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	H
1522	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
1523	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	Cl
1524	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	Br
1525	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	F
1526	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	H
1527	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1528	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	Cl
1529	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	Br
1530	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	F
1531	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F	H
1532	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>
1533	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F	Cl
1534	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F	Br
1535	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F	F
1536	CH <sub>3</sub>	Br	Cl	H	H
1537	CH <sub>3</sub>	Br	Cl	H	CH <sub>3</sub>
1538	CH <sub>3</sub>	Br	Cl	H	OCH <sub>3</sub>
1539	CH <sub>3</sub>	Br	Cl	H	Cl
1540	CH <sub>3</sub>	Br	Cl	H	Br
1541	CH <sub>3</sub>	Br	Cl	H	F
1542	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	H
1543	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>
1544	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
1545	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	Br
1546	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	F
1547	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	H
1548	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
1549	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
1550	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	Br
1551	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	F
1552	CH <sub>3</sub>	Br	Cl	Cl	H
1553	CH <sub>3</sub>	Br	Cl	Cl	CH <sub>3</sub>
1554	CH <sub>3</sub>	Br	Cl	Cl	OCH <sub>3</sub>
1555	CH <sub>3</sub>	Br	Cl	Cl	Cl
1556	CH <sub>3</sub>	Br	Cl	Cl	Br
1557	CH <sub>3</sub>	Br	Cl	Cl	F
1558	CH <sub>3</sub>	Br	Cl	Br	H
1559	CH <sub>3</sub>	Br	Cl	Br	CH <sub>3</sub>
1560	CH <sub>3</sub>	Br	Cl	Br	OCH <sub>3</sub>
1561	CH <sub>3</sub>	Br	Cl	Br	Br
1562	CH <sub>3</sub>	Br	Cl	F	H
1563	CH <sub>3</sub>	Br	Cl	F	CH <sub>3</sub>
1564	CH <sub>3</sub>	Br	Cl	F	OCH <sub>3</sub>
1565	CH <sub>3</sub>	Br	Cl	F	Br
1566	CH <sub>3</sub>	Br	Cl	F	F
1567	CH <sub>3</sub>	Br	Br	H	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1568	CH <sub>3</sub>	Br	Br	H	CH <sub>3</sub>
1569	CH <sub>3</sub>	Br	Br	H	OCH <sub>3</sub>
1570	CH <sub>3</sub>	Br	Br	H	Cl
1571	CH <sub>3</sub>	Br	Br	H	Br
1572	CH <sub>3</sub>	Br	Br	H	F
1573	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>	H
1574	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>
1575	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>
1576	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>	Cl
1577	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>	F
1578	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	H
1579	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>
1580	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
1581	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	Cl
1582	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	F
1583	CH <sub>3</sub>	Br	Br	Cl	H
1584	CH <sub>3</sub>	Br	Br	Cl	CH <sub>3</sub>
1585	CH <sub>3</sub>	Br	Br	Cl	OCH <sub>3</sub>
1586	CH <sub>3</sub>	Br	Br	Cl	Cl
1587	CH <sub>3</sub>	Br	Br	Cl	F
1588	CH <sub>3</sub>	Br	Br	Br	H
1589	CH <sub>3</sub>	Br	Br	Br	CH <sub>3</sub>
1590	CH <sub>3</sub>	Br	Br	Br	OCH <sub>3</sub>
1591	CH <sub>3</sub>	Br	Br	Br	Cl
1592	CH <sub>3</sub>	Br	Br	Br	Br
1593	CH <sub>3</sub>	Br	Br	Br	F
1594	CH <sub>3</sub>	Br	Br	F	H
1595	CH <sub>3</sub>	Br	Br	F	CH <sub>3</sub>
1596	CH <sub>3</sub>	Br	Br	F	OCH <sub>3</sub>
1597	CH <sub>3</sub>	Br	Br	F	Cl
1598	CH <sub>3</sub>	Br	Br	F	F
1599	CH <sub>3</sub>	Br	F	H	H
1600	CH <sub>3</sub>	Br	F	H	CH <sub>3</sub>
1601	CH <sub>3</sub>	Br	F	H	OCH <sub>3</sub>
1602	CH <sub>3</sub>	Br	F	H	Cl
1603	CH <sub>3</sub>	Br	F	H	Br
1604	CH <sub>3</sub>	Br	F	H	F
1605	CH <sub>3</sub>	Br	F	CH <sub>3</sub>	H
1606	CH <sub>3</sub>	Br	F	CH <sub>3</sub>	CH <sub>3</sub>
1607	CH <sub>3</sub>	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1608	CH <sub>3</sub>	Br	F	CH <sub>3</sub>	Cl
1609	CH <sub>3</sub>	Br	F	CH <sub>3</sub>	Br
1610	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>	H
1611	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>
1612	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>
1613	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>	Cl
1614	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>	Br
1615	CH <sub>3</sub>	Br	F	Cl	H
1616	CH <sub>3</sub>	Br	F	Cl	CH <sub>3</sub>
1617	CH <sub>3</sub>	Br	F	Cl	OCH <sub>3</sub>
1618	CH <sub>3</sub>	Br	F	Cl	Cl
1619	CH <sub>3</sub>	Br	F	Cl	Br
1620	CH <sub>3</sub>	Br	F	Br	H
1621	CH <sub>3</sub>	Br	F	Br	CH <sub>3</sub>
1622	CH <sub>3</sub>	Br	F	Br	OCH <sub>3</sub>
1623	CH <sub>3</sub>	Br	F	Br	Cl
1624	CH <sub>3</sub>	Br	F	Br	Br
1625	CH <sub>3</sub>	Br	F	F	H
1626	CH <sub>3</sub>	Br	F	F	CH <sub>3</sub>
1627	CH <sub>3</sub>	Br	F	F	OCH <sub>3</sub>
1628	CH <sub>3</sub>	Br	F	F	Cl
1629	CH <sub>3</sub>	Br	F	F	Br
1630	CH <sub>3</sub>	Br	F	F	F
1631	CH <sub>3</sub>	F	CH <sub>3</sub>	H	H
1632	CH <sub>3</sub>	F	CH <sub>3</sub>	H	CH <sub>3</sub>
1633	CH <sub>3</sub>	F	CH <sub>3</sub>	H	OCH <sub>3</sub>
1634	CH <sub>3</sub>	F	CH <sub>3</sub>	H	Cl
1635	CH <sub>3</sub>	F	CH <sub>3</sub>	H	Br
1636	CH <sub>3</sub>	F	CH <sub>3</sub>	H	F
1637	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	H
1638	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1639	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
1640	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl
1641	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	Br
1642	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	F
1643	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	H
1644	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1645	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
1646	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br
1647	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1648	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl	H
1649	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
1650	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl	Cl
1651	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl	Br
1652	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl	F
1653	CH <sub>3</sub>	F	CH <sub>3</sub>	Br	H
1654	CH <sub>3</sub>	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>
1655	CH <sub>3</sub>	F	CH <sub>3</sub>	Br	Cl
1656	CH <sub>3</sub>	F	CH <sub>3</sub>	Br	Br
1657	CH <sub>3</sub>	F	CH <sub>3</sub>	Br	F
1658	CH <sub>3</sub>	F	CH <sub>3</sub>	F	H
1659	CH <sub>3</sub>	F	CH <sub>3</sub>	F	OCH <sub>3</sub>
1660	CH <sub>3</sub>	F	CH <sub>3</sub>	F	Cl
1661	CH <sub>3</sub>	F	CH <sub>3</sub>	F	Br
1662	CH <sub>3</sub>	F	CH <sub>3</sub>	F	F
1663	CH <sub>3</sub>	F	OCH <sub>3</sub>	H	H
1664	CH <sub>3</sub>	F	OCH <sub>3</sub>	H	CH <sub>3</sub>
1665	CH <sub>3</sub>	F	OCH <sub>3</sub>	H	OCH <sub>3</sub>
1666	CH <sub>3</sub>	F	OCH <sub>3</sub>	H	Cl
1667	CH <sub>3</sub>	F	OCH <sub>3</sub>	H	Br
1668	CH <sub>3</sub>	F	OCH <sub>3</sub>	H	F
1669	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	H
1670	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1671	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
1672	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br
1673	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	F
1674	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H
1675	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
1676	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1677	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
1678	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
1679	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F
1680	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	H
1681	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
1682	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	Cl
1683	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	Br
1684	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	F
1685	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br	H
1686	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>
1687	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br	Cl



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1688	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br	Br
1689	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br	F
1690	CH <sub>3</sub>	F	OCH <sub>3</sub>	F	H
1691	CH <sub>3</sub>	F	OCH <sub>3</sub>	F	CH <sub>3</sub>
1692	CH <sub>3</sub>	F	OCH <sub>3</sub>	F	Cl
1693	CH <sub>3</sub>	F	OCH <sub>3</sub>	F	Br
1694	CH <sub>3</sub>	F	OCH <sub>3</sub>	F	F
1695	CH <sub>3</sub>	F	Cl	H	H
1696	CH <sub>3</sub>	F	Cl	H	CH <sub>3</sub>
1697	CH <sub>3</sub>	F	Cl	H	OCH <sub>3</sub>
1698	CH <sub>3</sub>	F	Cl	H	Cl
1699	CH <sub>3</sub>	F	Cl	H	Br
1700	CH <sub>3</sub>	F	Cl	H	F
1701	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>	H
1702	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>
1703	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
1704	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>	Br
1705	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>	F
1706	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	H
1707	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
1708	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
1709	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	Br
1710	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	F
1711	CH <sub>3</sub>	F	Cl	Cl	H
1712	CH <sub>3</sub>	F	Cl	Cl	CH <sub>3</sub>
1713	CH <sub>3</sub>	F	Cl	Cl	OCH <sub>3</sub>
1714	CH <sub>3</sub>	F	Cl	Cl	Cl
1715	CH <sub>3</sub>	F	Cl	Cl	Br
1716	CH <sub>3</sub>	F	Cl	Cl	F
1717	CH <sub>3</sub>	F	Cl	Br	H
1718	CH <sub>3</sub>	F	Cl	Br	CH <sub>3</sub>
1719	CH <sub>3</sub>	F	Cl	Br	OCH <sub>3</sub>
1720	CH <sub>3</sub>	F	Cl	Br	Br
1721	CH <sub>3</sub>	F	Cl	F	H
1722	CH <sub>3</sub>	F	Cl	F	CH <sub>3</sub>
1723	CH <sub>3</sub>	F	Cl	F	OCH <sub>3</sub>
1724	CH <sub>3</sub>	F	Cl	F	Br
1725	CH <sub>3</sub>	F	Cl	F	F
1726	CH <sub>3</sub>	F	Br	H	H
1727	CH <sub>3</sub>	F	Br	H	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1728	CH <sub>3</sub>	F	Br	H	OCH <sub>3</sub>
1729	CH <sub>3</sub>	F	Br	H	Cl
1730	CH <sub>3</sub>	F	Br	H	Br
1731	CH <sub>3</sub>	F	Br	H	F
1732	CH <sub>3</sub>	F	Br	CH <sub>3</sub>	H
1733	CH <sub>3</sub>	F	Br	CH <sub>3</sub>	CH <sub>3</sub>
1734	CH <sub>3</sub>	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>
1735	CH <sub>3</sub>	F	Br	CH <sub>3</sub>	Cl
1736	CH <sub>3</sub>	F	Br	CH <sub>3</sub>	F
1737	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>	H
1738	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>
1739	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
1740	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>	Cl
1741	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>	F
1742	CH <sub>3</sub>	F	Br	Cl	H
1743	CH <sub>3</sub>	F	Br	Cl	CH <sub>3</sub>
1744	CH <sub>3</sub>	F	Br	Cl	OCH <sub>3</sub>
1745	CH <sub>3</sub>	F	Br	Cl	Cl
1746	CH <sub>3</sub>	F	Br	Cl	F
1747	CH <sub>3</sub>	F	Br	Br	H
1748	CH <sub>3</sub>	F	Br	Br	CH <sub>3</sub>
1749	CH <sub>3</sub>	F	Br	Br	OCH <sub>3</sub>
1750	CH <sub>3</sub>	F	Br	Br	Cl
1751	CH <sub>3</sub>	F	Br	Br	Br
1752	CH <sub>3</sub>	F	Br	Br	F
1753	CH <sub>3</sub>	F	Br	F	H
1754	CH <sub>3</sub>	F	Br	F	CH <sub>3</sub>
1755	CH <sub>3</sub>	F	Br	F	OCH <sub>3</sub>
1756	CH <sub>3</sub>	F	Br	F	Cl
1757	CH <sub>3</sub>	F	Br	F	F
1758	CH <sub>3</sub>	F	F	H	H
1759	CH <sub>3</sub>	F	F	H	CH <sub>3</sub>
1760	CH <sub>3</sub>	F	F	H	OCH <sub>3</sub>
1761	CH <sub>3</sub>	F	F	H	Cl
1762	CH <sub>3</sub>	F	F	H	Br
1763	CH <sub>3</sub>	F	F	H	F
1764	CH <sub>3</sub>	F	F	CH <sub>3</sub>	H
1765	CH <sub>3</sub>	F	F	CH <sub>3</sub>	CH <sub>3</sub>
1766	CH <sub>3</sub>	F	F	CH <sub>3</sub>	OCH <sub>3</sub>
1767	CH <sub>3</sub>	F	F	CH <sub>3</sub>	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1768	CH <sub>3</sub>	F	F	CH <sub>3</sub>	Br
1769	CH <sub>3</sub>	F	F	OCH <sub>3</sub>	H
1770	CH <sub>3</sub>	F	F	OCH <sub>3</sub>	CH <sub>3</sub>
1771	CH <sub>3</sub>	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>
1772	CH <sub>3</sub>	F	F	OCH <sub>3</sub>	Cl
1773	CH <sub>3</sub>	F	F	OCH <sub>3</sub>	Br
1774	CH <sub>3</sub>	F	F	Cl	H
1775	CH <sub>3</sub>	F	F	Cl	CH <sub>3</sub>
1776	CH <sub>3</sub>	F	F	Cl	OCH <sub>3</sub>
1777	CH <sub>3</sub>	F	F	Cl	Cl
1778	CH <sub>3</sub>	F	F	Cl	Br
1779	CH <sub>3</sub>	F	F	Br	H
1780	CH <sub>3</sub>	F	F	Br	CH <sub>3</sub>
1781	CH <sub>3</sub>	F	F	Br	OCH <sub>3</sub>
1782	CH <sub>3</sub>	F	F	Br	Cl
1783	CH <sub>3</sub>	F	F	Br	Br
1784	CH <sub>3</sub>	F	F	F	H
1785	CH <sub>3</sub>	F	F	F	CH <sub>3</sub>
1786	CH <sub>3</sub>	F	F	F	OCH <sub>3</sub>
1787	CH <sub>3</sub>	F	F	F	Cl
1788	CH <sub>3</sub>	F	F	F	Br
1789	CH <sub>3</sub>	F	F	F	F
1790	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	H
1791	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
1792	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
1793	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H
1794	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	H
1795	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	H
1796	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
1797	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1798	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
1799	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
1800	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1801	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
1802	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
1803	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
1804	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	Cl
1805	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
1806	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
1807	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1808	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
1809	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl
1810	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	Br
1811	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
1812	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
1813	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
1814	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br
1815	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	Br
1816	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H	F
1817	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
1818	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
1819	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F
1820	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br	F
1821	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F	F
1822	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	H
1823	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
1824	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
1825	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
1826	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H
1827	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	H
1828	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
1829	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1830	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
1831	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
1832	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
1833	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
1834	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
1835	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1836	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
1837	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
1838	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
1839	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
1840	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
1841	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
1842	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	Br
1843	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
1844	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
1845	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
1846	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
1847	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1848	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H	F
1849	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
1850	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
1851	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
1852	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F
1853	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F	F
1854	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H	H
1855	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H
1856	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
1857	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	H
1858	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	H
1859	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F	H
1860	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H	CH <sub>3</sub>
1861	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
1862	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
1863	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
1864	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
1865	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>
1866	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
1867	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
1868	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
1869	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
1870	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
1871	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
1872	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H	Cl
1873	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	Cl
1874	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H	Br
1875	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
1876	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
1877	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	Br
1878	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br	Br
1879	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F	Br
1880	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H	F
1881	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F
1882	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
1883	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl	F
1884	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F	F
1885	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H	H
1886	OCH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	H
1887	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1888	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	H
1889	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br	H
1890	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F	H
1891	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H	CH <sub>3</sub>
1892	OCH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
1893	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
1894	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
1895	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>
1896	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F	CH <sub>3</sub>
1897	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H	OCH <sub>3</sub>
1898	OCH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
1899	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
1900	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
1901	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
1902	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>
1903	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H	Cl
1904	OCH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
1905	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
1906	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	Cl
1907	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br	Cl
1908	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F	Cl
1909	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H	Br
1910	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br	Br
1911	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H	F
1912	OCH <sub>3</sub>	CH <sub>3</sub>	Br	CH <sub>3</sub>	F
1913	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F
1914	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl	F
1915	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br	F
1916	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F	F
1917	OCH <sub>3</sub>	CH <sub>3</sub>	F	H	H
1918	OCH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	H
1919	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	H
1920	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl	H
1921	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br	H
1922	OCH <sub>3</sub>	CH <sub>3</sub>	F	F	H
1923	OCH <sub>3</sub>	CH <sub>3</sub>	F	H	CH <sub>3</sub>
1924	OCH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
1925	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
1926	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>
1927	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br	CH <sub>3</sub>



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1928	OCH <sub>3</sub>	CH <sub>3</sub>	F	F	CH <sub>3</sub>
1929	OCH <sub>3</sub>	CH <sub>3</sub>	F	H	OCH <sub>3</sub>
1930	OCH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
1931	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
1932	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
1933	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>
1934	OCH <sub>3</sub>	CH <sub>3</sub>	F	F	OCH <sub>3</sub>
1935	OCH <sub>3</sub>	CH <sub>3</sub>	F	H	Cl
1936	OCH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl
1937	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
1938	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl	Cl
1939	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br	Cl
1940	OCH <sub>3</sub>	CH <sub>3</sub>	F	F	Cl
1941	OCH <sub>3</sub>	CH <sub>3</sub>	F	H	Br
1942	OCH <sub>3</sub>	CH <sub>3</sub>	F	CH <sub>3</sub>	Br
1943	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br
1944	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl	Br
1945	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br	Br
1946	OCH <sub>3</sub>	CH <sub>3</sub>	F	F	Br
1947	OCH <sub>3</sub>	CH <sub>3</sub>	F	H	F
1948	OCH <sub>3</sub>	CH <sub>3</sub>	F	F	F
1949	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	H
1950	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
1951	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
1952	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	Cl
1953	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	Br
1954	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H	F
1955	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
1956	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1957	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
1958	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
1959	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
1960	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
1961	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
1962	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1963	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
1964	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
1965	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
1966	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H
1967	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
1968	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
1969	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
1970	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F
1971	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H
1972	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
1973	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
1974	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br
1975	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F
1976	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	H
1977	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
1978	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl
1979	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br
1980	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F	F
1981	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	H
1982	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
1983	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
1984	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
1985	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Br
1986	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H	F
1987	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
1988	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
1989	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
1990	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
1991	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
1992	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
1993	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
1994	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
1995	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
1996	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
1997	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
1998	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
1999	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
2000	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
2001	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
2002	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
2003	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H
2004	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
2005	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
2006	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
2007	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2008	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H
2009	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
2010	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
2011	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br
2012	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F
2013	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	H
2014	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	CH <sub>3</sub>
2015	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
2016	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	Cl
2017	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	Br
2018	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H	F
2019	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H
2020	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
2021	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
2022	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
2023	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F
2024	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
2025	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
2026	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
2027	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
2028	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
2029	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	H
2030	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
2031	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
2032	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	Cl
2033	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	Br
2034	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl	F
2035	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	H
2036	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
2037	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
2038	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br	Br
2039	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	H
2040	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>
2041	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
2042	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	Br
2043	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F	F
2044	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H	H
2045	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H	CH <sub>3</sub>
2046	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H	OCH <sub>3</sub>
2047	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2048	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H	Br
2049	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H	F
2050	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H
2051	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
2052	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
2053	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
2054	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F
2055	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H
2056	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
2057	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
2058	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
2059	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F
2060	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	H
2061	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
2062	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
2063	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	Cl
2064	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl	F
2065	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	H
2066	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>
2067	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
2068	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	Cl
2069	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	Br
2070	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br	F
2071	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F	H
2072	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>
2073	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>
2074	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F	Cl
2075	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F	F
2076	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H	H
2077	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H	CH <sub>3</sub>
2078	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H	OCH <sub>3</sub>
2079	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H	Cl
2080	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H	Br
2081	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H	F
2082	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	H
2083	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
2084	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
2085	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl
2086	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br
2087	OCH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2088	OCH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
2089	OCH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
2090	OCH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
2091	OCH <sub>3</sub>	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br
2092	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	H
2093	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>
2094	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
2095	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	Cl
2096	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl	Br
2097	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br	H
2098	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>
2099	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>
2100	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br	Cl
2101	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br	Br
2102	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F	H
2103	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F	CH <sub>3</sub>
2104	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>
2105	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F	Cl
2106	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F	Br
2107	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F	F
2108	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H	H
2109	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H	CH <sub>3</sub>
2110	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H	OCH <sub>3</sub>
2111	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H	Cl
2112	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H	Br
2113	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H	F
2114	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H
2115	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2116	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
2117	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl
2118	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br
2119	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F
2120	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H
2121	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2122	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
2123	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br
2124	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F
2125	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	H
2126	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
2127	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2128	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	Br
2129	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Cl	F
2130	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	H
2131	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>
2132	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	Cl
2133	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	Br
2134	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br	F
2135	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F	H
2136	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>
2137	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F	Cl
2138	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F	Br
2139	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F	F
2140	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	H
2141	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	CH <sub>3</sub>
2142	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	OCH <sub>3</sub>
2143	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	Cl
2144	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	Br
2145	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H	F
2146	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H
2147	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2148	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
2149	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br
2150	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F
2151	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H
2152	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
2153	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2154	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
2155	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
2156	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F
2157	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	H
2158	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
2159	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	Cl
2160	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	Br
2161	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Cl	F
2162	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	H
2163	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>
2164	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	Cl
2165	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	Br
2166	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br	F
2167	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2168	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>
2169	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	Cl
2170	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	Br
2171	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F	F
2172	OCH <sub>3</sub>	Cl	Cl	H	H
2173	OCH <sub>3</sub>	Cl	Cl	H	CH <sub>3</sub>
2174	OCH <sub>3</sub>	Cl	Cl	H	OCH <sub>3</sub>
2175	OCH <sub>3</sub>	Cl	Cl	H	Cl
2176	OCH <sub>3</sub>	Cl	Cl	H	Br
2177	OCH <sub>3</sub>	Cl	Cl	H	F
2178	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	H
2179	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>
2180	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
2181	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	Br
2182	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>	F
2183	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	H
2184	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
2185	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
2186	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	Br
2187	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>	F
2188	OCH <sub>3</sub>	Cl	Cl	Cl	H
2189	OCH <sub>3</sub>	Cl	Cl	Cl	CH <sub>3</sub>
2190	OCH <sub>3</sub>	Cl	Cl	Cl	OCH <sub>3</sub>
2191	OCH <sub>3</sub>	Cl	Cl	Cl	Cl
2192	OCH <sub>3</sub>	Cl	Cl	Cl	Br
2193	OCH <sub>3</sub>	Cl	Cl	Cl	F
2194	OCH <sub>3</sub>	Cl	Cl	Br	H
2195	OCH <sub>3</sub>	Cl	Cl	Br	CH <sub>3</sub>
2196	OCH <sub>3</sub>	Cl	Cl	Br	OCH <sub>3</sub>
2197	OCH <sub>3</sub>	Cl	Cl	Br	Br
2198	OCH <sub>3</sub>	Cl	Cl	F	H
2199	OCH <sub>3</sub>	Cl	Cl	F	CH <sub>3</sub>
2200	OCH <sub>3</sub>	Cl	Cl	F	OCH <sub>3</sub>
2201	OCH <sub>3</sub>	Cl	Cl	F	Br
2202	OCH <sub>3</sub>	Cl	Cl	F	F
2203	OCH <sub>3</sub>	Cl	Br	H	H
2204	OCH <sub>3</sub>	Cl	Br	H	CH <sub>3</sub>
2205	OCH <sub>3</sub>	Cl	Br	H	OCH <sub>3</sub>
2206	OCH <sub>3</sub>	Cl	Br	H	Cl
2207	OCH <sub>3</sub>	Cl	Br	H	Br



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2208	OCH <sub>3</sub>	Cl	Br	H	F
2209	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	H
2210	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>
2211	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>
2212	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	Cl
2213	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>	F
2214	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	H
2215	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>
2216	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
2217	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	Cl
2218	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>	F
2219	OCH <sub>3</sub>	Cl	Br	Cl	H
2220	OCH <sub>3</sub>	Cl	Br	Cl	CH <sub>3</sub>
2221	OCH <sub>3</sub>	Cl	Br	Cl	OCH <sub>3</sub>
2222	OCH <sub>3</sub>	Cl	Br	Cl	Cl
2223	OCH <sub>3</sub>	Cl	Br	Cl	F
2224	OCH <sub>3</sub>	Cl	Br	Br	H
2225	OCH <sub>3</sub>	Cl	Br	Br	CH <sub>3</sub>
2226	OCH <sub>3</sub>	Cl	Br	Br	OCH <sub>3</sub>
2227	OCH <sub>3</sub>	Cl	Br	Br	Cl
2228	OCH <sub>3</sub>	Cl	Br	Br	Br
2229	OCH <sub>3</sub>	Cl	Br	Br	F
2230	OCH <sub>3</sub>	Cl	Br	F	H
2231	OCH <sub>3</sub>	Cl	Br	F	CH <sub>3</sub>
2232	OCH <sub>3</sub>	Cl	Br	F	OCH <sub>3</sub>
2233	OCH <sub>3</sub>	Cl	Br	F	Cl
2234	OCH <sub>3</sub>	Cl	Br	F	F
2235	OCH <sub>3</sub>	Cl	F	H	H
2236	OCH <sub>3</sub>	Cl	F	H	CH <sub>3</sub>
2237	OCH <sub>3</sub>	Cl	F	H	OCH <sub>3</sub>
2238	OCH <sub>3</sub>	Cl	F	H	Cl
2239	OCH <sub>3</sub>	Cl	F	H	Br
2240	OCH <sub>3</sub>	Cl	F	H	F
2241	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>	H
2242	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>
2243	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>
2244	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>	Cl
2245	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>	Br
2246	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	H
2247	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2248	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>
2249	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	Cl
2250	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>	Br
2251	OCH <sub>3</sub>	Cl	F	Cl	H
2252	OCH <sub>3</sub>	Cl	F	Cl	CH <sub>3</sub>
2253	OCH <sub>3</sub>	Cl	F	Cl	OCH <sub>3</sub>
2254	OCH <sub>3</sub>	Cl	F	Cl	Cl
2255	OCH <sub>3</sub>	Cl	F	Cl	Br
2256	OCH <sub>3</sub>	Cl	F	Br	H
2257	OCH <sub>3</sub>	Cl	F	Br	CH <sub>3</sub>
2258	OCH <sub>3</sub>	Cl	F	Br	OCH <sub>3</sub>
2259	OCH <sub>3</sub>	Cl	F	Br	Cl
2260	OCH <sub>3</sub>	Cl	F	Br	Br
2261	OCH <sub>3</sub>	Cl	F	F	H
2262	OCH <sub>3</sub>	Cl	F	F	CH <sub>3</sub>
2263	OCH <sub>3</sub>	Cl	F	F	OCH <sub>3</sub>
2264	OCH <sub>3</sub>	Cl	F	F	Cl
2265	OCH <sub>3</sub>	Cl	F	F	Br
2266	OCH <sub>3</sub>	Cl	F	F	F
2267	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H	H
2268	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H	CH <sub>3</sub>
2269	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H	OCH <sub>3</sub>
2270	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H	Cl
2271	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H	Br
2272	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H	F
2273	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	H
2274	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2275	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
2276	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl
2277	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br
2278	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>	F
2279	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H
2280	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2281	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
2282	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br
2283	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F
2284	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	H
2285	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
2286	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	Cl
2287	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2288	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl	F
2289	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Br	H
2290	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>
2291	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Br	Cl
2292	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Br	Br
2293	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Br	F
2294	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F	H
2295	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>
2296	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F	Cl
2297	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F	Br
2298	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F	F
2299	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H	H
2300	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H	CH <sub>3</sub>
2301	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H	OCH <sub>3</sub>
2302	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H	Cl
2303	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H	Br
2304	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H	F
2305	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H
2306	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2307	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
2308	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br
2309	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F
2310	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H
2311	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
2312	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2313	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
2314	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
2315	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F
2316	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	H
2317	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
2318	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	Cl
2319	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	Br
2320	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl	F
2321	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	H
2322	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>
2323	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	Cl
2324	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	Br
2325	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Br	F
2326	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F	H
2327	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2328	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F	Cl
2329	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F	Br
2330	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F	F
2331	OCH <sub>3</sub>	Br	Cl	H	H
2332	OCH <sub>3</sub>	Br	Cl	H	CH <sub>3</sub>
2333	OCH <sub>3</sub>	Br	Cl	H	OCH <sub>3</sub>
2334	OCH <sub>3</sub>	Br	Cl	H	Cl
2335	OCH <sub>3</sub>	Br	Cl	H	Br
2336	OCH <sub>3</sub>	Br	Cl	H	F
2337	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	H
2338	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>
2339	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
2340	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	Br
2341	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>	F
2342	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	H
2343	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
2344	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
2345	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	Br
2346	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>	F
2347	OCH <sub>3</sub>	Br	Cl	Cl	H
2348	OCH <sub>3</sub>	Br	Cl	Cl	CH <sub>3</sub>
2349	OCH <sub>3</sub>	Br	Cl	Cl	OCH <sub>3</sub>
2350	OCH <sub>3</sub>	Br	Cl	Cl	Cl
2351	OCH <sub>3</sub>	Br	Cl	Cl	Br
2352	OCH <sub>3</sub>	Br	Cl	Cl	F
2353	OCH <sub>3</sub>	Br	Cl	Br	H
2354	OCH <sub>3</sub>	Br	Cl	Br	CH <sub>3</sub>
2355	OCH <sub>3</sub>	Br	Cl	Br	OCH <sub>3</sub>
2356	OCH <sub>3</sub>	Br	Cl	Br	Br
2357	OCH <sub>3</sub>	Br	Cl	F	H
2358	OCH <sub>3</sub>	Br	Cl	F	CH <sub>3</sub>
2359	OCH <sub>3</sub>	Br	Cl	F	OCH <sub>3</sub>
2360	OCH <sub>3</sub>	Br	Cl	F	Br
2361	OCH <sub>3</sub>	Br	Cl	F	F
2362	OCH <sub>3</sub>	Br	Br	H	H
2363	OCH <sub>3</sub>	Br	Br	H	CH <sub>3</sub>
2364	OCH <sub>3</sub>	Br	Br	H	OCH <sub>3</sub>
2365	OCH <sub>3</sub>	Br	Br	H	Cl
2366	OCH <sub>3</sub>	Br	Br	H	Br
2367	OCH <sub>3</sub>	Br	Br	H	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2368	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>	H
2369	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>
2370	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>
2371	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>	Cl
2372	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>	F
2373	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	H
2374	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>
2375	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
2376	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	Cl
2377	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>	F
2378	OCH <sub>3</sub>	Br	Br	Cl	H
2379	OCH <sub>3</sub>	Br	Br	Cl	CH <sub>3</sub>
2380	OCH <sub>3</sub>	Br	Br	Cl	OCH <sub>3</sub>
2381	OCH <sub>3</sub>	Br	Br	Cl	Cl
2382	OCH <sub>3</sub>	Br	Br	Cl	F
2383	OCH <sub>3</sub>	Br	Br	Br	H
2384	OCH <sub>3</sub>	Br	Br	Br	CH <sub>3</sub>
2385	OCH <sub>3</sub>	Br	Br	Br	OCH <sub>3</sub>
2386	OCH <sub>3</sub>	Br	Br	Br	Cl
2387	OCH <sub>3</sub>	Br	Br	Br	Br
2388	OCH <sub>3</sub>	Br	Br	Br	F
2389	OCH <sub>3</sub>	Br	Br	F	H
2390	OCH <sub>3</sub>	Br	Br	F	CH <sub>3</sub>
2391	OCH <sub>3</sub>	Br	Br	F	OCH <sub>3</sub>
2392	OCH <sub>3</sub>	Br	Br	F	Cl
2393	OCH <sub>3</sub>	Br	Br	F	F
2394	OCH <sub>3</sub>	Br	F	H	H
2395	OCH <sub>3</sub>	Br	F	H	CH <sub>3</sub>
2396	OCH <sub>3</sub>	Br	F	H	OCH <sub>3</sub>
2397	OCH <sub>3</sub>	Br	F	H	Cl
2398	OCH <sub>3</sub>	Br	F	H	Br
2399	OCH <sub>3</sub>	Br	F	H	F
2400	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>	H
2401	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>	CH <sub>3</sub>
2402	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>
2403	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>	Cl
2404	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>	Br
2405	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>	H
2406	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>
2407	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2408	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>	Cl
2409	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>	Br
2410	OCH <sub>3</sub>	Br	F	Cl	H
2411	OCH <sub>3</sub>	Br	F	Cl	CH <sub>3</sub>
2412	OCH <sub>3</sub>	Br	F	Cl	OCH <sub>3</sub>
2413	OCH <sub>3</sub>	Br	F	Cl	Cl
2414	OCH <sub>3</sub>	Br	F	Cl	Br
2415	OCH <sub>3</sub>	Br	F	Br	H
2416	OCH <sub>3</sub>	Br	F	Br	CH <sub>3</sub>
2417	OCH <sub>3</sub>	Br	F	Br	OCH <sub>3</sub>
2418	OCH <sub>3</sub>	Br	F	Br	Cl
2419	OCH <sub>3</sub>	Br	F	Br	Br
2420	OCH <sub>3</sub>	Br	F	F	H
2421	OCH <sub>3</sub>	Br	F	F	CH <sub>3</sub>
2422	OCH <sub>3</sub>	Br	F	F	OCH <sub>3</sub>
2423	OCH <sub>3</sub>	Br	F	F	Cl
2424	OCH <sub>3</sub>	Br	F	F	Br
2425	OCH <sub>3</sub>	Br	F	F	F
2426	OCH <sub>3</sub>	F	CH <sub>3</sub>	H	H
2427	OCH <sub>3</sub>	F	CH <sub>3</sub>	H	CH <sub>3</sub>
2428	OCH <sub>3</sub>	F	CH <sub>3</sub>	H	OCH <sub>3</sub>
2429	OCH <sub>3</sub>	F	CH <sub>3</sub>	H	Cl
2430	OCH <sub>3</sub>	F	CH <sub>3</sub>	H	Br
2431	OCH <sub>3</sub>	F	CH <sub>3</sub>	H	F
2432	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	H
2433	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2434	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
2435	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl
2436	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	Br
2437	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>	F
2438	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	H
2439	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2440	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
2441	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br
2442	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>	F
2443	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl	H
2444	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
2445	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl	Cl
2446	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl	Br
2447	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2448	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br	H
2449	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>
2450	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br	Cl
2451	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br	Br
2452	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br	F
2453	OCH <sub>3</sub>	F	CH <sub>3</sub>	F	H
2454	OCH <sub>3</sub>	F	CH <sub>3</sub>	F	OCH <sub>3</sub>
2455	OCH <sub>3</sub>	F	CH <sub>3</sub>	F	Cl
2456	OCH <sub>3</sub>	F	CH <sub>3</sub>	F	Br
2457	OCH <sub>3</sub>	F	CH <sub>3</sub>	F	F
2458	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H	H
2459	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H	CH <sub>3</sub>
2460	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H	OCH <sub>3</sub>
2461	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H	Cl
2462	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H	Br
2463	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H	F
2464	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	H
2465	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2466	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
2467	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br
2468	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>	F
2469	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H
2470	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
2471	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2472	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
2473	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
2474	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F
2475	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	H
2476	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
2477	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	Cl
2478	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	Br
2479	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl	F
2480	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br	H
2481	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>
2482	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br	Cl
2483	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br	Br
2484	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br	F
2485	OCH <sub>3</sub>	F	OCH <sub>3</sub>	F	H
2486	OCH <sub>3</sub>	F	OCH <sub>3</sub>	F	CH <sub>3</sub>
2487	OCH <sub>3</sub>	F	OCH <sub>3</sub>	F	Cl



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2488	OCH <sub>3</sub>	F	OCH <sub>3</sub>	F	Br
2489	OCH <sub>3</sub>	F	OCH <sub>3</sub>	F	F
2490	OCH <sub>3</sub>	F	Cl	H	H
2491	OCH <sub>3</sub>	F	Cl	H	CH <sub>3</sub>
2492	OCH <sub>3</sub>	F	Cl	H	OCH <sub>3</sub>
2493	OCH <sub>3</sub>	F	Cl	H	Cl
2494	OCH <sub>3</sub>	F	Cl	H	Br
2495	OCH <sub>3</sub>	F	Cl	H	F
2496	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>	H
2497	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>
2498	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
2499	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>	Br
2500	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>	F
2501	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	H
2502	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
2503	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
2504	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	Br
2505	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>	F
2506	OCH <sub>3</sub>	F	Cl	Cl	H
2507	OCH <sub>3</sub>	F	Cl	Cl	CH <sub>3</sub>
2508	OCH <sub>3</sub>	F	Cl	Cl	OCH <sub>3</sub>
2509	OCH <sub>3</sub>	F	Cl	Cl	Cl
2510	OCH <sub>3</sub>	F	Cl	Cl	Br
2511	OCH <sub>3</sub>	F	Cl	Cl	F
2512	OCH <sub>3</sub>	F	Cl	Br	H
2513	OCH <sub>3</sub>	F	Cl	Br	CH <sub>3</sub>
2514	OCH <sub>3</sub>	F	Cl	Br	OCH <sub>3</sub>
2515	OCH <sub>3</sub>	F	Cl	Br	Br
2516	OCH <sub>3</sub>	F	Cl	F	H
2517	OCH <sub>3</sub>	F	Cl	F	CH <sub>3</sub>
2518	OCH <sub>3</sub>	F	Cl	F	OCH <sub>3</sub>
2519	OCH <sub>3</sub>	F	Cl	F	Br
2520	OCH <sub>3</sub>	F	Cl	F	F
2521	OCH <sub>3</sub>	F	Br	H	H
2522	OCH <sub>3</sub>	F	Br	H	CH <sub>3</sub>
2523	OCH <sub>3</sub>	F	Br	H	OCH <sub>3</sub>
2524	OCH <sub>3</sub>	F	Br	H	Cl
2525	OCH <sub>3</sub>	F	Br	H	Br
2526	OCH <sub>3</sub>	F	Br	H	F
2527	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2528	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>	CH <sub>3</sub>
2529	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>
2530	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>	Cl
2531	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>	F
2532	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>	H
2533	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>
2534	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
2535	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>	Cl
2536	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>	F
2537	OCH <sub>3</sub>	F	Br	Cl	H
2538	OCH <sub>3</sub>	F	Br	Cl	CH <sub>3</sub>
2539	OCH <sub>3</sub>	F	Br	Cl	OCH <sub>3</sub>
2540	OCH <sub>3</sub>	F	Br	Cl	Cl
2541	OCH <sub>3</sub>	F	Br	Cl	F
2542	OCH <sub>3</sub>	F	Br	Br	H
2543	OCH <sub>3</sub>	F	Br	Br	CH <sub>3</sub>
2544	OCH <sub>3</sub>	F	Br	Br	OCH <sub>3</sub>
2545	OCH <sub>3</sub>	F	Br	Br	Cl
2546	OCH <sub>3</sub>	F	Br	Br	Br
2547	OCH <sub>3</sub>	F	Br	Br	F
2548	OCH <sub>3</sub>	F	Br	F	H
2549	OCH <sub>3</sub>	F	Br	F	CH <sub>3</sub>
2550	OCH <sub>3</sub>	F	Br	F	OCH <sub>3</sub>
2551	OCH <sub>3</sub>	F	Br	F	Cl
2552	OCH <sub>3</sub>	F	Br	F	F
2553	OCH <sub>3</sub>	F	F	H	H
2554	OCH <sub>3</sub>	F	F	H	CH <sub>3</sub>
2555	OCH <sub>3</sub>	F	F	H	OCH <sub>3</sub>
2556	OCH <sub>3</sub>	F	F	H	Cl
2557	OCH <sub>3</sub>	F	F	H	Br
2558	OCH <sub>3</sub>	F	F	H	F
2559	OCH <sub>3</sub>	F	F	CH <sub>3</sub>	H
2560	OCH <sub>3</sub>	F	F	CH <sub>3</sub>	CH <sub>3</sub>
2561	OCH <sub>3</sub>	F	F	CH <sub>3</sub>	OCH <sub>3</sub>
2562	OCH <sub>3</sub>	F	F	CH <sub>3</sub>	Cl
2563	OCH <sub>3</sub>	F	F	CH <sub>3</sub>	Br
2564	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>	H
2565	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>	CH <sub>3</sub>
2566	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>
2567	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2568	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>	Br
2569	OCH <sub>3</sub>	F	F	Cl	H
2570	OCH <sub>3</sub>	F	F	Cl	CH <sub>3</sub>
2571	OCH <sub>3</sub>	F	F	Cl	OCH <sub>3</sub>
2572	OCH <sub>3</sub>	F	F	Cl	Cl
2573	OCH <sub>3</sub>	F	F	Cl	Br
2574	OCH <sub>3</sub>	F	F	Br	H
2575	OCH <sub>3</sub>	F	F	Br	CH <sub>3</sub>
2576	OCH <sub>3</sub>	F	F	Br	OCH <sub>3</sub>
2577	OCH <sub>3</sub>	F	F	Br	Cl
2578	OCH <sub>3</sub>	F	F	Br	Br
2579	OCH <sub>3</sub>	F	F	F	H
2580	OCH <sub>3</sub>	F	F	F	CH <sub>3</sub>
2581	OCH <sub>3</sub>	F	F	F	OCH <sub>3</sub>
2582	OCH <sub>3</sub>	F	F	F	Cl
2583	OCH <sub>3</sub>	F	F	F	Br
2584	OCH <sub>3</sub>	F	F	F	F
2585	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H	H
2586	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
2587	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
2588	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H
2589	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br	H
2590	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F	H
2591	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
2592	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2593	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
2594	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
2595	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2596	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
2597	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
2598	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
2599	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H	Cl
2600	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
2601	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
2602	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
2603	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
2604	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl
2605	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H	Br
2606	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
2607	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2608	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
2609	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br
2610	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F	Br
2611	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H	F
2612	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
2613	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
2614	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F
2615	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br	F
2616	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F	F
2617	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H	H
2618	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
2619	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
2620	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
2621	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H
2622	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F	H
2623	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
2624	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2625	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
2626	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
2627	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
2628	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
2629	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
2630	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2631	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
2632	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
2633	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
2634	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
2635	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
2636	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
2637	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H	Br
2638	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
2639	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
2640	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
2641	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
2642	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br
2643	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H	F
2644	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
2645	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
2646	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
2647	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2648	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F	F
2649	Cl	CH <sub>3</sub>	Cl	H	H
2650	Cl	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H
2651	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
2652	Cl	CH <sub>3</sub>	Cl	Cl	H
2653	Cl	CH <sub>3</sub>	Cl	Br	H
2654	Cl	CH <sub>3</sub>	Cl	F	H
2655	Cl	CH <sub>3</sub>	Cl	H	CH <sub>3</sub>
2656	Cl	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
2657	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
2658	Cl	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
2659	Cl	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
2660	Cl	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>
2661	Cl	CH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
2662	Cl	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
2663	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
2664	Cl	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
2665	Cl	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
2666	Cl	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
2667	Cl	CH <sub>3</sub>	Cl	H	Cl
2668	Cl	CH <sub>3</sub>	Cl	Cl	Cl
2669	Cl	CH <sub>3</sub>	Cl	H	Br
2670	Cl	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
2671	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
2672	Cl	CH <sub>3</sub>	Cl	Cl	Br
2673	Cl	CH <sub>3</sub>	Cl	Br	Br
2674	Cl	CH <sub>3</sub>	Cl	F	Br
2675	Cl	CH <sub>3</sub>	Cl	H	F
2676	Cl	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F
2677	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
2678	Cl	CH <sub>3</sub>	Cl	Cl	F
2679	Cl	CH <sub>3</sub>	Cl	F	F
2680	Cl	CH <sub>3</sub>	Br	H	H
2681	Cl	CH <sub>3</sub>	Br	CH <sub>3</sub>	H
2682	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H
2683	Cl	CH <sub>3</sub>	Br	Cl	H
2684	Cl	CH <sub>3</sub>	Br	Br	H
2685	Cl	CH <sub>3</sub>	Br	F	H
2686	Cl	CH <sub>3</sub>	Br	H	CH <sub>3</sub>
2687	Cl	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2688	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
2689	Cl	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
2690	Cl	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>
2691	Cl	CH <sub>3</sub>	Br	F	CH <sub>3</sub>
2692	Cl	CH <sub>3</sub>	Br	H	OCH <sub>3</sub>
2693	Cl	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
2694	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
2695	Cl	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
2696	Cl	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
2697	Cl	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>
2698	Cl	CH <sub>3</sub>	Br	H	Cl
2699	Cl	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
2700	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
2701	Cl	CH <sub>3</sub>	Br	Cl	Cl
2702	Cl	CH <sub>3</sub>	Br	Br	Cl
2703	Cl	CH <sub>3</sub>	Br	F	Cl
2704	Cl	CH <sub>3</sub>	Br	H	Br
2705	Cl	CH <sub>3</sub>	Br	Br	Br
2706	Cl	CH <sub>3</sub>	Br	H	F
2707	Cl	CH <sub>3</sub>	Br	CH <sub>3</sub>	F
2708	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F
2709	Cl	CH <sub>3</sub>	Br	Cl	F
2710	Cl	CH <sub>3</sub>	Br	Br	F
2711	Cl	CH <sub>3</sub>	Br	F	F
2712	Cl	CH <sub>3</sub>	F	H	H
2713	Cl	CH <sub>3</sub>	F	CH <sub>3</sub>	H
2714	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>	H
2715	Cl	CH <sub>3</sub>	F	Cl	H
2716	Cl	CH <sub>3</sub>	F	Br	H
2717	Cl	CH <sub>3</sub>	F	F	H
2718	Cl	CH <sub>3</sub>	F	H	CH <sub>3</sub>
2719	Cl	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
2720	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
2721	Cl	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>
2722	Cl	CH <sub>3</sub>	F	Br	CH <sub>3</sub>
2723	Cl	CH <sub>3</sub>	F	F	CH <sub>3</sub>
2724	Cl	CH <sub>3</sub>	F	H	OCH <sub>3</sub>
2725	Cl	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
2726	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
2727	Cl	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2728	Cl	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>
2729	Cl	CH <sub>3</sub>	F	F	OCH <sub>3</sub>
2730	Cl	CH <sub>3</sub>	F	H	Cl
2731	Cl	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl
2732	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
2733	Cl	CH <sub>3</sub>	F	Cl	Cl
2734	Cl	CH <sub>3</sub>	F	Br	Cl
2735	Cl	CH <sub>3</sub>	F	F	Cl
2736	Cl	CH <sub>3</sub>	F	H	Br
2737	Cl	CH <sub>3</sub>	F	CH <sub>3</sub>	Br
2738	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br
2739	Cl	CH <sub>3</sub>	F	Cl	Br
2740	Cl	CH <sub>3</sub>	F	Br	Br
2741	Cl	CH <sub>3</sub>	F	F	Br
2742	Cl	CH <sub>3</sub>	F	H	F
2743	Cl	CH <sub>3</sub>	F	F	F
2744	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H	H
2745	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
2746	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
2747	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H	Cl
2748	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H	Br
2749	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H	F
2750	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
2751	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2752	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
2753	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
2754	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
2755	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
2756	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
2757	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2758	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
2759	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
2760	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
2761	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H
2762	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
2763	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
2764	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
2765	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F
2766	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H
2767	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2768	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
2769	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br
2770	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F
2771	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F	H
2772	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
2773	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl
2774	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br
2775	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F	F
2776	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H	H
2777	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
2778	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
2779	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
2780	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Br
2781	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H	F
2782	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
2783	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2784	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
2785	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
2786	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
2787	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
2788	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
2789	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2790	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
2791	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
2792	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
2793	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
2794	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
2795	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
2796	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
2797	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
2798	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H
2799	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
2800	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
2801	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
2802	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F
2803	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H
2804	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
2805	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
2806	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br
2807	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2808	Cl	OCH <sub>3</sub>	Cl	H	H
2809	Cl	OCH <sub>3</sub>	Cl	H	CH <sub>3</sub>
2810	Cl	OCH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
2811	Cl	OCH <sub>3</sub>	Cl	H	Cl
2812	Cl	OCH <sub>3</sub>	Cl	H	Br
2813	Cl	OCH <sub>3</sub>	Cl	H	F
2814	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H
2815	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
2816	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
2817	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
2818	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F
2819	Cl	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
2820	Cl	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
2821	Cl	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
2822	Cl	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
2823	Cl	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
2824	Cl	OCH <sub>3</sub>	Cl	Cl	H
2825	Cl	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
2826	Cl	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
2827	Cl	OCH <sub>3</sub>	Cl	Cl	Cl
2828	Cl	OCH <sub>3</sub>	Cl	Cl	Br
2829	Cl	OCH <sub>3</sub>	Cl	Cl	F
2830	Cl	OCH <sub>3</sub>	Cl	Br	H
2831	Cl	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
2832	Cl	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
2833	Cl	OCH <sub>3</sub>	Cl	Br	Br
2834	Cl	OCH <sub>3</sub>	Cl	F	H
2835	Cl	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>
2836	Cl	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
2837	Cl	OCH <sub>3</sub>	Cl	F	Br
2838	Cl	OCH <sub>3</sub>	Cl	F	F
2839	Cl	OCH <sub>3</sub>	Br	H	H
2840	Cl	OCH <sub>3</sub>	Br	H	CH <sub>3</sub>
2841	Cl	OCH <sub>3</sub>	Br	H	OCH <sub>3</sub>
2842	Cl	OCH <sub>3</sub>	Br	H	Cl
2843	Cl	OCH <sub>3</sub>	Br	H	Br
2844	Cl	OCH <sub>3</sub>	Br	H	F
2845	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H
2846	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
2847	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2848	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
2849	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F
2850	Cl	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H
2851	Cl	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
2852	Cl	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
2853	Cl	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
2854	Cl	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F
2855	Cl	OCH <sub>3</sub>	Br	Cl	H
2856	Cl	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
2857	Cl	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
2858	Cl	OCH <sub>3</sub>	Br	Cl	Cl
2859	Cl	OCH <sub>3</sub>	Br	Cl	F
2860	Cl	OCH <sub>3</sub>	Br	Br	H
2861	Cl	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>
2862	Cl	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
2863	Cl	OCH <sub>3</sub>	Br	Br	Cl
2864	Cl	OCH <sub>3</sub>	Br	Br	Br
2865	Cl	OCH <sub>3</sub>	Br	Br	F
2866	Cl	OCH <sub>3</sub>	Br	F	H
2867	Cl	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>
2868	Cl	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>
2869	Cl	OCH <sub>3</sub>	Br	F	Cl
2870	Cl	OCH <sub>3</sub>	Br	F	F
2871	Cl	OCH <sub>3</sub>	F	H	H
2872	Cl	OCH <sub>3</sub>	F	H	CH <sub>3</sub>
2873	Cl	OCH <sub>3</sub>	F	H	OCH <sub>3</sub>
2874	Cl	OCH <sub>3</sub>	F	H	Cl
2875	Cl	OCH <sub>3</sub>	F	H	Br
2876	Cl	OCH <sub>3</sub>	F	H	F
2877	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>	H
2878	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
2879	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
2880	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl
2881	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br
2882	Cl	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H
2883	Cl	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
2884	Cl	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
2885	Cl	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
2886	Cl	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br
2887	Cl	OCH <sub>3</sub>	F	Cl	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2888	Cl	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>
2889	Cl	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
2890	Cl	OCH <sub>3</sub>	F	Cl	Cl
2891	Cl	OCH <sub>3</sub>	F	Cl	Br
2892	Cl	OCH <sub>3</sub>	F	Br	H
2893	Cl	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>
2894	Cl	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>
2895	Cl	OCH <sub>3</sub>	F	Br	Cl
2896	Cl	OCH <sub>3</sub>	F	Br	Br
2897	Cl	OCH <sub>3</sub>	F	F	H
2898	Cl	OCH <sub>3</sub>	F	F	CH <sub>3</sub>
2899	Cl	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>
2900	Cl	OCH <sub>3</sub>	F	F	Cl
2901	Cl	OCH <sub>3</sub>	F	F	Br
2902	Cl	OCH <sub>3</sub>	F	F	F
2903	Cl	Cl	CH <sub>3</sub>	H	H
2904	Cl	Cl	CH <sub>3</sub>	H	CH <sub>3</sub>
2905	Cl	Cl	CH <sub>3</sub>	H	OCH <sub>3</sub>
2906	Cl	Cl	CH <sub>3</sub>	H	Cl
2907	Cl	Cl	CH <sub>3</sub>	H	Br
2908	Cl	Cl	CH <sub>3</sub>	H	F
2909	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H
2910	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2911	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
2912	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl
2913	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br
2914	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F
2915	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H
2916	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2917	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
2918	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br
2919	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F
2920	Cl	Cl	CH <sub>3</sub>	Cl	H
2921	Cl	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
2922	Cl	Cl	CH <sub>3</sub>	Cl	Cl
2923	Cl	Cl	CH <sub>3</sub>	Cl	Br
2924	Cl	Cl	CH <sub>3</sub>	Cl	F
2925	Cl	Cl	CH <sub>3</sub>	Br	H
2926	Cl	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>
2927	Cl	Cl	CH <sub>3</sub>	Br	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2928	Cl	Cl	CH <sub>3</sub>	Br	Br
2929	Cl	Cl	CH <sub>3</sub>	Br	F
2930	Cl	Cl	CH <sub>3</sub>	F	H
2931	Cl	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>
2932	Cl	Cl	CH <sub>3</sub>	F	Cl
2933	Cl	Cl	CH <sub>3</sub>	F	Br
2934	Cl	Cl	CH <sub>3</sub>	F	F
2935	Cl	Cl	OCH <sub>3</sub>	H	H
2936	Cl	Cl	OCH <sub>3</sub>	H	CH <sub>3</sub>
2937	Cl	Cl	OCH <sub>3</sub>	H	OCH <sub>3</sub>
2938	Cl	Cl	OCH <sub>3</sub>	H	Cl
2939	Cl	Cl	OCH <sub>3</sub>	H	Br
2940	Cl	Cl	OCH <sub>3</sub>	H	F
2941	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H
2942	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
2943	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
2944	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br
2945	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F
2946	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H
2947	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
2948	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
2949	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
2950	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
2951	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F
2952	Cl	Cl	OCH <sub>3</sub>	Cl	H
2953	Cl	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
2954	Cl	Cl	OCH <sub>3</sub>	Cl	Cl
2955	Cl	Cl	OCH <sub>3</sub>	Cl	Br
2956	Cl	Cl	OCH <sub>3</sub>	Cl	F
2957	Cl	Cl	OCH <sub>3</sub>	Br	H
2958	Cl	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>
2959	Cl	Cl	OCH <sub>3</sub>	Br	Cl
2960	Cl	Cl	OCH <sub>3</sub>	Br	Br
2961	Cl	Cl	OCH <sub>3</sub>	Br	F
2962	Cl	Cl	OCH <sub>3</sub>	F	H
2963	Cl	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>
2964	Cl	Cl	OCH <sub>3</sub>	F	Cl
2965	Cl	Cl	OCH <sub>3</sub>	F	Br
2966	Cl	Cl	OCH <sub>3</sub>	F	F
2967	Cl	Cl	Cl	H	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
2968	Cl	Cl	Cl	H	CH <sub>3</sub>
2969	Cl	Cl	Cl	H	OCH <sub>3</sub>
2970	Cl	Cl	Cl	H	Cl
2971	Cl	Cl	Cl	H	Br
2972	Cl	Cl	Cl	H	F
2973	Cl	Cl	Cl	CH <sub>3</sub>	H
2974	Cl	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>
2975	Cl	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
2976	Cl	Cl	Cl	CH <sub>3</sub>	Br
2977	Cl	Cl	Cl	CH <sub>3</sub>	F
2978	Cl	Cl	Cl	OCH <sub>3</sub>	H
2979	Cl	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
2980	Cl	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
2981	Cl	Cl	Cl	OCH <sub>3</sub>	Br
2982	Cl	Cl	Cl	OCH <sub>3</sub>	F
2983	Cl	Cl	Cl	Cl	H
2984	Cl	Cl	Cl	Cl	CH <sub>3</sub>
2985	Cl	Cl	Cl	Cl	OCH <sub>3</sub>
2986	Cl	Cl	Cl	Cl	Cl
2987	Cl	Cl	Cl	Cl	Br
2988	Cl	Cl	Cl	Cl	F
2989	Cl	Cl	Cl	Br	H
2990	Cl	Cl	Cl	Br	CH <sub>3</sub>
2991	Cl	Cl	Cl	Br	OCH <sub>3</sub>
2992	Cl	Cl	Cl	Br	Br
2993	Cl	Cl	Cl	F	H
2994	Cl	Cl	Cl	F	CH <sub>3</sub>
2995	Cl	Cl	Cl	F	OCH <sub>3</sub>
2996	Cl	Cl	Cl	F	Br
2997	Cl	Cl	Cl	F	F
2998	Cl	Cl	Br	H	H
2999	Cl	Cl	Br	H	CH <sub>3</sub>
3000	Cl	Cl	Br	H	OCH <sub>3</sub>
3001	Cl	Cl	Br	H	Cl
3002	Cl	Cl	Br	H	Br
3003	Cl	Cl	Br	H	F
3004	Cl	Cl	Br	CH <sub>3</sub>	H
3005	Cl	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>
3006	Cl	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>
3007	Cl	Cl	Br	CH <sub>3</sub>	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3008	Cl	Cl	Br	CH <sub>3</sub>	F
3009	Cl	Cl	Br	OCH <sub>3</sub>	H
3010	Cl	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>
3011	Cl	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
3012	Cl	Cl	Br	OCH <sub>3</sub>	Cl
3013	Cl	Cl	Br	OCH <sub>3</sub>	F
3014	Cl	Cl	Br	Cl	H
3015	Cl	Cl	Br	Cl	CH <sub>3</sub>
3016	Cl	Cl	Br	Cl	OCH <sub>3</sub>
3017	Cl	Cl	Br	Cl	Cl
3018	Cl	Cl	Br	Cl	F
3019	Cl	Cl	Br	Br	H
3020	Cl	Cl	Br	Br	CH <sub>3</sub>
3021	Cl	Cl	Br	Br	OCH <sub>3</sub>
3022	Cl	Cl	Br	Br	Cl
3023	Cl	Cl	Br	Br	Br
3024	Cl	Cl	Br	Br	F
3025	Cl	Cl	Br	F	H
3026	Cl	Cl	Br	F	CH <sub>3</sub>
3027	Cl	Cl	Br	F	OCH <sub>3</sub>
3028	Cl	Cl	Br	F	Cl
3029	Cl	Cl	Br	F	F
3030	Cl	Cl	F	H	H
3031	Cl	Cl	F	H	CH <sub>3</sub>
3032	Cl	Cl	F	H	OCH <sub>3</sub>
3033	Cl	Cl	F	H	Cl
3034	Cl	Cl	F	H	Br
3035	Cl	Cl	F	H	F
3036	Cl	Cl	F	CH <sub>3</sub>	H
3037	Cl	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>
3038	Cl	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>
3039	Cl	Cl	F	CH <sub>3</sub>	Cl
3040	Cl	Cl	F	CH <sub>3</sub>	Br
3041	Cl	Cl	F	OCH <sub>3</sub>	H
3042	Cl	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>
3043	Cl	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>
3044	Cl	Cl	F	OCH <sub>3</sub>	Cl
3045	Cl	Cl	F	OCH <sub>3</sub>	Br
3046	Cl	Cl	F	Cl	H
3047	Cl	Cl	F	Cl	CH <sub>3</sub>



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3048	Cl	Cl	F	Cl	OCH <sub>3</sub>
3049	Cl	Cl	F	Cl	Cl
3050	Cl	Cl	F	Cl	Br
3051	Cl	Cl	F	Br	H
3052	Cl	Cl	F	Br	CH <sub>3</sub>
3053	Cl	Cl	F	Br	OCH <sub>3</sub>
3054	Cl	Cl	F	Br	Cl
3055	Cl	Cl	F	Br	Br
3056	Cl	Cl	F	F	H
3057	Cl	Cl	F	F	CH <sub>3</sub>
3058	Cl	Cl	F	F	OCH <sub>3</sub>
3059	Cl	Cl	F	F	Cl
3060	Cl	Cl	F	F	Br
3061	Cl	Cl	F	F	F
3062	Cl	Br	CH <sub>3</sub>	H	H
3063	Cl	Br	CH <sub>3</sub>	H	CH <sub>3</sub>
3064	Cl	Br	CH <sub>3</sub>	H	OCH <sub>3</sub>
3065	Cl	Br	CH <sub>3</sub>	H	Cl
3066	Cl	Br	CH <sub>3</sub>	H	Br
3067	Cl	Br	CH <sub>3</sub>	H	F
3068	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>	H
3069	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3070	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
3071	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl
3072	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br
3073	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>	F
3074	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H
3075	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3076	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
3077	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br
3078	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F
3079	Cl	Br	CH <sub>3</sub>	Cl	H
3080	Cl	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
3081	Cl	Br	CH <sub>3</sub>	Cl	Cl
3082	Cl	Br	CH <sub>3</sub>	Cl	Br
3083	Cl	Br	CH <sub>3</sub>	Cl	F
3084	Cl	Br	CH <sub>3</sub>	Br	H
3085	Cl	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>
3086	Cl	Br	CH <sub>3</sub>	Br	Cl
3087	Cl	Br	CH <sub>3</sub>	Br	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3088	Cl	Br	CH <sub>3</sub>	Br	F
3089	Cl	Br	CH <sub>3</sub>	F	H
3090	Cl	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>
3091	Cl	Br	CH <sub>3</sub>	F	Cl
3092	Cl	Br	CH <sub>3</sub>	F	Br
3093	Cl	Br	CH <sub>3</sub>	F	F
3094	Cl	Br	OCH <sub>3</sub>	H	H
3095	Cl	Br	OCH <sub>3</sub>	H	CH <sub>3</sub>
3096	Cl	Br	OCH <sub>3</sub>	H	OCH <sub>3</sub>
3097	Cl	Br	OCH <sub>3</sub>	H	Cl
3098	Cl	Br	OCH <sub>3</sub>	H	Br
3099	Cl	Br	OCH <sub>3</sub>	H	F
3100	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H
3101	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3102	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
3103	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br
3104	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F
3105	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H
3106	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
3107	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3108	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
3109	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
3110	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F
3111	Cl	Br	OCH <sub>3</sub>	Cl	H
3112	Cl	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
3113	Cl	Br	OCH <sub>3</sub>	Cl	Cl
3114	Cl	Br	OCH <sub>3</sub>	Cl	Br
3115	Cl	Br	OCH <sub>3</sub>	Cl	F
3116	Cl	Br	OCH <sub>3</sub>	Br	H
3117	Cl	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>
3118	Cl	Br	OCH <sub>3</sub>	Br	Cl
3119	Cl	Br	OCH <sub>3</sub>	Br	Br
3120	Cl	Br	OCH <sub>3</sub>	Br	F
3121	Cl	Br	OCH <sub>3</sub>	F	H
3122	Cl	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>
3123	Cl	Br	OCH <sub>3</sub>	F	Cl
3124	Cl	Br	OCH <sub>3</sub>	F	Br
3125	Cl	Br	OCH <sub>3</sub>	F	F
3126	Cl	Br	Cl	H	H
3127	Cl	Br	Cl	H	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3128	Cl	Br	Cl	H	OCH <sub>3</sub>
3129	Cl	Br	Cl	H	Cl
3130	Cl	Br	Cl	H	Br
3131	Cl	Br	Cl	H	F
3132	Cl	Br	Cl	CH <sub>3</sub>	H
3133	Cl	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>
3134	Cl	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
3135	Cl	Br	Cl	CH <sub>3</sub>	Br
3136	Cl	Br	Cl	CH <sub>3</sub>	F
3137	Cl	Br	Cl	OCH <sub>3</sub>	H
3138	Cl	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
3139	Cl	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
3140	Cl	Br	Cl	OCH <sub>3</sub>	Br
3141	Cl	Br	Cl	OCH <sub>3</sub>	F
3142	Cl	Br	Cl	Cl	H
3143	Cl	Br	Cl	Cl	CH <sub>3</sub>
3144	Cl	Br	Cl	Cl	OCH <sub>3</sub>
3145	Cl	Br	Cl	Cl	Cl
3146	Cl	Br	Cl	Cl	Br
3147	Cl	Br	Cl	Cl	F
3148	Cl	Br	Cl	Br	H
3149	Cl	Br	Cl	Br	CH <sub>3</sub>
3150	Cl	Br	Cl	Br	OCH <sub>3</sub>
3151	Cl	Br	Cl	Br	Br
3152	Cl	Br	Cl	F	H
3153	Cl	Br	Cl	F	CH <sub>3</sub>
3154	Cl	Br	Cl	F	OCH <sub>3</sub>
3155	Cl	Br	Cl	F	Br
3156	Cl	Br	Cl	F	F
3157	Cl	Br	Br	H	H
3158	Cl	Br	Br	H	CH <sub>3</sub>
3159	Cl	Br	Br	H	OCH <sub>3</sub>
3160	Cl	Br	Br	H	Cl
3161	Cl	Br	Br	H	Br
3162	Cl	Br	Br	H	F
3163	Cl	Br	Br	CH <sub>3</sub>	H
3164	Cl	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>
3165	Cl	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>
3166	Cl	Br	Br	CH <sub>3</sub>	Cl
3167	Cl	Br	Br	CH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3168	Cl	Br	Br	OCH <sub>3</sub>	H
3169	Cl	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>
3170	Cl	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
3171	Cl	Br	Br	OCH <sub>3</sub>	Cl
3172	Cl	Br	Br	OCH <sub>3</sub>	F
3173	Cl	Br	Br	Cl	H
3174	Cl	Br	Br	Cl	CH <sub>3</sub>
3175	Cl	Br	Br	Cl	OCH <sub>3</sub>
3176	Cl	Br	Br	Cl	Cl
3177	Cl	Br	Br	Cl	F
3178	Cl	Br	Br	Br	H
3179	Cl	Br	Br	Br	CH <sub>3</sub>
3180	Cl	Br	Br	Br	OCH <sub>3</sub>
3181	Cl	Br	Br	Br	Cl
3182	Cl	Br	Br	Br	Br
3183	Cl	Br	Br	Br	F
3184	Cl	Br	Br	F	H
3185	Cl	Br	Br	F	CH <sub>3</sub>
3186	Cl	Br	Br	F	OCH <sub>3</sub>
3187	Cl	Br	Br	F	Cl
3188	Cl	Br	Br	F	F
3189	Cl	Br	F	H	H
3190	Cl	Br	F	H	CH <sub>3</sub>
3191	Cl	Br	F	H	OCH <sub>3</sub>
3192	Cl	Br	F	H	Cl
3193	Cl	Br	F	H	Br
3194	Cl	Br	F	H	F
3195	Cl	Br	F	CH <sub>3</sub>	H
3196	Cl	Br	F	CH <sub>3</sub>	CH <sub>3</sub>
3197	Cl	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>
3198	Cl	Br	F	CH <sub>3</sub>	Cl
3199	Cl	Br	F	CH <sub>3</sub>	Br
3200	Cl	Br	F	OCH <sub>3</sub>	H
3201	Cl	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>
3202	Cl	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>
3203	Cl	Br	F	OCH <sub>3</sub>	Cl
3204	Cl	Br	F	OCH <sub>3</sub>	Br
3205	Cl	Br	F	Cl	H
3206	Cl	Br	F	Cl	CH <sub>3</sub>
3207	Cl	Br	F	Cl	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3208	Cl	Br	F	Cl	Cl
3209	Cl	Br	F	Cl	Br
3210	Cl	Br	F	Br	H
3211	Cl	Br	F	Br	CH <sub>3</sub>
3212	Cl	Br	F	Br	OCH <sub>3</sub>
3213	Cl	Br	F	Br	Cl
3214	Cl	Br	F	Br	Br
3215	Cl	Br	F	F	H
3216	Cl	Br	F	F	CH <sub>3</sub>
3217	Cl	Br	F	F	OCH <sub>3</sub>
3218	Cl	Br	F	F	Cl
3219	Cl	Br	F	F	Br
3220	Cl	Br	F	F	F
3221	Cl	F	CH <sub>3</sub>	H	H
3222	Cl	F	CH <sub>3</sub>	H	CH <sub>3</sub>
3223	Cl	F	CH <sub>3</sub>	H	OCH <sub>3</sub>
3224	Cl	F	CH <sub>3</sub>	H	Cl
3225	Cl	F	CH <sub>3</sub>	H	Br
3226	Cl	F	CH <sub>3</sub>	H	F
3227	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>	H
3228	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3229	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
3230	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl
3231	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>	Br
3232	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>	F
3233	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>	H
3234	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3235	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
3236	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br
3237	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>	F
3238	Cl	F	CH <sub>3</sub>	Cl	H
3239	Cl	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
3240	Cl	F	CH <sub>3</sub>	Cl	Cl
3241	Cl	F	CH <sub>3</sub>	Cl	Br
3242	Cl	F	CH <sub>3</sub>	Cl	F
3243	Cl	F	CH <sub>3</sub>	Br	H
3244	Cl	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>
3245	Cl	F	CH <sub>3</sub>	Br	Cl
3246	Cl	F	CH <sub>3</sub>	Br	Br
3247	Cl	F	CH <sub>3</sub>	Br	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3248	Cl	F	CH <sub>3</sub>	F	H
3249	Cl	F	CH <sub>3</sub>	F	OCH <sub>3</sub>
3250	Cl	F	CH <sub>3</sub>	F	Cl
3251	Cl	F	CH <sub>3</sub>	F	Br
3252	Cl	F	CH <sub>3</sub>	F	F
3253	Cl	F	OCH <sub>3</sub>	H	H
3254	Cl	F	OCH <sub>3</sub>	H	CH <sub>3</sub>
3255	Cl	F	OCH <sub>3</sub>	H	OCH <sub>3</sub>
3256	Cl	F	OCH <sub>3</sub>	H	Cl
3257	Cl	F	OCH <sub>3</sub>	H	Br
3258	Cl	F	OCH <sub>3</sub>	H	F
3259	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>	H
3260	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3261	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
3262	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br
3263	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>	F
3264	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H
3265	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
3266	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3267	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
3268	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
3269	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F
3270	Cl	F	OCH <sub>3</sub>	Cl	H
3271	Cl	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
3272	Cl	F	OCH <sub>3</sub>	Cl	Cl
3273	Cl	F	OCH <sub>3</sub>	Cl	Br
3274	Cl	F	OCH <sub>3</sub>	Cl	F
3275	Cl	F	OCH <sub>3</sub>	Br	H
3276	Cl	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>
3277	Cl	F	OCH <sub>3</sub>	Br	Cl
3278	Cl	F	OCH <sub>3</sub>	Br	Br
3279	Cl	F	OCH <sub>3</sub>	Br	F
3280	Cl	F	OCH <sub>3</sub>	F	H
3281	Cl	F	OCH <sub>3</sub>	F	CH <sub>3</sub>
3282	Cl	F	OCH <sub>3</sub>	F	Cl
3283	Cl	F	OCH <sub>3</sub>	F	Br
3284	Cl	F	OCH <sub>3</sub>	F	F
3285	Cl	F	Cl	H	H
3286	Cl	F	Cl	H	CH <sub>3</sub>
3287	Cl	F	Cl	H	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3288	Cl	F	Cl	H	Cl
3289	Cl	F	Cl	H	Br
3290	Cl	F	Cl	H	F
3291	Cl	F	Cl	CH <sub>3</sub>	H
3292	Cl	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>
3293	Cl	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
3294	Cl	F	Cl	CH <sub>3</sub>	Br
3295	Cl	F	Cl	CH <sub>3</sub>	F
3296	Cl	F	Cl	OCH <sub>3</sub>	H
3297	Cl	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
3298	Cl	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
3299	Cl	F	Cl	OCH <sub>3</sub>	Br
3300	Cl	F	Cl	OCH <sub>3</sub>	F
3301	Cl	F	Cl	Cl	H
3302	Cl	F	Cl	Cl	CH <sub>3</sub>
3303	Cl	F	Cl	Cl	OCH <sub>3</sub>
3304	Cl	F	Cl	Cl	Cl
3305	Cl	F	Cl	Cl	Br
3306	Cl	F	Cl	Cl	F
3307	Cl	F	Cl	Br	H
3308	Cl	F	Cl	Br	CH <sub>3</sub>
3309	Cl	F	Cl	Br	OCH <sub>3</sub>
3310	Cl	F	Cl	Br	Br
3311	Cl	F	Cl	F	H
3312	Cl	F	Cl	F	CH <sub>3</sub>
3313	Cl	F	Cl	F	OCH <sub>3</sub>
3314	Cl	F	Cl	F	Br
3315	Cl	F	Cl	F	F
3316	Cl	F	Br	H	H
3317	Cl	F	Br	H	CH <sub>3</sub>
3318	Cl	F	Br	H	OCH <sub>3</sub>
3319	Cl	F	Br	H	Cl
3320	Cl	F	Br	H	Br
3321	Cl	F	Br	H	F
3322	Cl	F	Br	CH <sub>3</sub>	H
3323	Cl	F	Br	CH <sub>3</sub>	CH <sub>3</sub>
3324	Cl	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>
3325	Cl	F	Br	CH <sub>3</sub>	Cl
3326	Cl	F	Br	CH <sub>3</sub>	F
3327	Cl	F	Br	OCH <sub>3</sub>	H



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3368	Cl	F	F	Cl	Br
3369	Cl	F	F	Br	H
3370	Cl	F	F	Br	CH <sub>3</sub>
3371	Cl	F	F	Br	OCH <sub>3</sub>
3372	Cl	F	F	Br	Cl
3373	Cl	F	F	Br	Br
3374	Cl	F	F	F	H
3375	Cl	F	F	F	CH <sub>3</sub>
3376	Cl	F	F	F	OCH <sub>3</sub>
3377	Cl	F	F	F	Cl
3378	Cl	F	F	F	Br
3379	Cl	F	F	F	F
3380	Br	CH <sub>3</sub>	CH <sub>3</sub>	H	H
3381	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
3382	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
3383	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H
3384	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br	H
3385	Br	CH <sub>3</sub>	CH <sub>3</sub>	F	H
3386	Br	CH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
3387	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3388	Br	CH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
3389	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
3390	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3391	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
3392	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
3393	Br	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
3394	Br	CH <sub>3</sub>	CH <sub>3</sub>	H	Cl
3395	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
3396	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
3397	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
3398	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
3399	Br	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl
3400	Br	CH <sub>3</sub>	CH <sub>3</sub>	H	Br
3401	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
3402	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
3403	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
3404	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br
3405	Br	CH <sub>3</sub>	CH <sub>3</sub>	F	Br
3406	Br	CH <sub>3</sub>	CH <sub>3</sub>	H	F
3407	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3408	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
3409	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F
3410	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br	F
3411	Br	CH <sub>3</sub>	CH <sub>3</sub>	F	F
3412	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H	H
3413	Br	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
3414	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
3415	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
3416	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H
3417	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F	H
3418	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
3419	Br	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3420	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
3421	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
3422	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
3423	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
3424	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
3425	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3426	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
3427	Br	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
3428	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
3429	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
3430	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
3431	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
3432	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H	Br
3433	Br	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
3434	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
3435	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
3436	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
3437	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br
3438	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H	F
3439	Br	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
3440	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
3441	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
3442	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F
3443	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F	F
3444	Br	CH <sub>3</sub>	Cl	H	H
3445	Br	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H
3446	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
3447	Br	CH <sub>3</sub>	Cl	Cl	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3328	Cl	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>
3329	Cl	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
3330	Cl	F	Br	OCH <sub>3</sub>	Cl
3331	Cl	F	Br	OCH <sub>3</sub>	F
3332	Cl	F	Br	Cl	H
3333	Cl	F	Br	Cl	CH <sub>3</sub>
3334	Cl	F	Br	Cl	OCH <sub>3</sub>
3335	Cl	F	Br	Cl	Cl
3336	Cl	F	Br	Cl	F
3337	Cl	F	Br	Br	H
3338	Cl	F	Br	Br	CH <sub>3</sub>
3339	Cl	F	Br	Br	OCH <sub>3</sub>
3340	Cl	F	Br	Br	Cl
3341	Cl	F	Br	Br	Br
3342	Cl	F	Br	Br	F
3343	Cl	F	Br	F	H
3344	Cl	F	Br	F	CH <sub>3</sub>
3345	Cl	F	Br	F	OCH <sub>3</sub>
3346	Cl	F	Br	F	Cl
3347	Cl	F	Br	F	F
3348	Cl	F	F	H	H
3349	Cl	F	F	H	CH <sub>3</sub>
3350	Cl	F	F	H	OCH <sub>3</sub>
3351	Cl	F	F	H	Cl
3352	Cl	F	F	H	Br
3353	Cl	F	F	H	F
3354	Cl	F	F	CH <sub>3</sub>	H
3355	Cl	F	F	CH <sub>3</sub>	CH <sub>3</sub>
3356	Cl	F	F	CH <sub>3</sub>	OCH <sub>3</sub>
3357	Cl	F	F	CH <sub>3</sub>	Cl
3358	Cl	F	F	CH <sub>3</sub>	Br
3359	Cl	F	F	OCH <sub>3</sub>	H
3360	Cl	F	F	OCH <sub>3</sub>	CH <sub>3</sub>
3361	Cl	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>
3362	Cl	F	F	OCH <sub>3</sub>	Cl
3363	Cl	F	F	OCH <sub>3</sub>	Br
3364	Cl	F	F	Cl	H
3365	Cl	F	F	Cl	CH <sub>3</sub>
3366	Cl	F	F	Cl	OCH <sub>3</sub>
3367	Cl	F	F	Cl	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3448	Br	CH <sub>3</sub>	Cl	Br	H
3449	Br	CH <sub>3</sub>	Cl	F	H
3450	Br	CH <sub>3</sub>	Cl	H	CH <sub>3</sub>
3451	Br	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
3452	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
3453	Br	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
3454	Br	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
3455	Br	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>
3456	Br	CH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
3457	Br	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
3458	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
3459	Br	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
3460	Br	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
3461	Br	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
3462	Br	CH <sub>3</sub>	Cl	H	Cl
3463	Br	CH <sub>3</sub>	Cl	Cl	Cl
3464	Br	CH <sub>3</sub>	Cl	H	Br
3465	Br	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
3466	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
3467	Br	CH <sub>3</sub>	Cl	Cl	Br
3468	Br	CH <sub>3</sub>	Cl	Br	Br
3469	Br	CH <sub>3</sub>	Cl	F	Br
3470	Br	CH <sub>3</sub>	Cl	H	F
3471	Br	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F
3472	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
3473	Br	CH <sub>3</sub>	Cl	Cl	F
3474	Br	CH <sub>3</sub>	Cl	F	F
3475	Br	CH <sub>3</sub>	Br	H	H
3476	Br	CH <sub>3</sub>	Br	CH <sub>3</sub>	H
3477	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H
3478	Br	CH <sub>3</sub>	Br	Cl	H
3479	Br	CH <sub>3</sub>	Br	Br	H
3480	Br	CH <sub>3</sub>	Br	F	H
3481	Br	CH <sub>3</sub>	Br	H	CH <sub>3</sub>
3482	Br	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
3483	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
3484	Br	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
3485	Br	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>
3486	Br	CH <sub>3</sub>	Br	F	CH <sub>3</sub>
3487	Br	CH <sub>3</sub>	Br	H	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3488	Br	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
3489	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
3490	Br	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
3491	Br	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
3492	Br	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>
3493	Br	CH <sub>3</sub>	Br	H	Cl
3494	Br	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
3495	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
3496	Br	CH <sub>3</sub>	Br	Cl	Cl
3497	Br	CH <sub>3</sub>	Br	Br	Cl
3498	Br	CH <sub>3</sub>	Br	F	Cl
3499	Br	CH <sub>3</sub>	Br	H	Br
3500	Br	CH <sub>3</sub>	Br	Br	Br
3501	Br	CH <sub>3</sub>	Br	H	F
3502	Br	CH <sub>3</sub>	Br	CH <sub>3</sub>	F
3503	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F
3504	Br	CH <sub>3</sub>	Br	Cl	F
3505	Br	CH <sub>3</sub>	Br	Br	F
3506	Br	CH <sub>3</sub>	Br	F	F
3507	Br	CH <sub>3</sub>	F	H	H
3508	Br	CH <sub>3</sub>	F	CH <sub>3</sub>	H
3509	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>	H
3510	Br	CH <sub>3</sub>	F	Cl	H
3511	Br	CH <sub>3</sub>	F	Br	H
3512	Br	CH <sub>3</sub>	F	F	H
3513	Br	CH <sub>3</sub>	F	H	CH <sub>3</sub>
3514	Br	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
3515	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
3516	Br	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>
3517	Br	CH <sub>3</sub>	F	Br	CH <sub>3</sub>
3518	Br	CH <sub>3</sub>	F	F	CH <sub>3</sub>
3519	Br	CH <sub>3</sub>	F	H	OCH <sub>3</sub>
3520	Br	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
3521	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
3522	Br	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
3523	Br	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>
3524	Br	CH <sub>3</sub>	F	F	OCH <sub>3</sub>
3525	Br	CH <sub>3</sub>	F	H	Cl
3526	Br	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl
3527	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3528	Br	CH <sub>3</sub>	F	Cl	Cl
3529	Br	CH <sub>3</sub>	F	Br	Cl
3530	Br	CH <sub>3</sub>	F	F	Cl
3531	Br	CH <sub>3</sub>	F	H	Br
3532	Br	CH <sub>3</sub>	F	CH <sub>3</sub>	Br
3533	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br
3534	Br	CH <sub>3</sub>	F	Cl	Br
3535	Br	CH <sub>3</sub>	F	Br	Br
3536	Br	CH <sub>3</sub>	F	F	Br
3537	Br	CH <sub>3</sub>	F	H	F
3538	Br	CH <sub>3</sub>	F	F	F
3539	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H	H
3540	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
3541	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
3542	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H	Cl
3543	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H	Br
3544	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H	F
3545	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
3546	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3547	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
3548	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
3549	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
3550	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
3551	Br	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
3552	Br	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3553	Br	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
3554	Br	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
3555	Br	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
3556	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H
3557	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
3558	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
3559	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
3560	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F
3561	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H
3562	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
3563	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
3564	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br
3565	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F
3566	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F	H
3567	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3568	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl
3569	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br
3570	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F	F
3571	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H	H
3572	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
3573	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
3574	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
3575	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Br
3576	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H	F
3577	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
3578	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3579	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
3580	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
3581	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
3582	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
3583	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
3584	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3585	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
3586	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
3587	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
3588	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
3589	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
3590	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
3591	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
3592	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
3593	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H
3594	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
3595	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
3596	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
3597	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F
3598	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H
3599	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
3600	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
3601	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br
3602	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F
3603	Br	OCH <sub>3</sub>	Cl	H	H
3604	Br	OCH <sub>3</sub>	Cl	H	CH <sub>3</sub>
3605	Br	OCH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
3606	Br	OCH <sub>3</sub>	Cl	H	Cl
3607	Br	OCH <sub>3</sub>	Cl	H	Br



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3608	Br	OCH <sub>3</sub>	Cl	H	F
3609	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H
3610	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
3611	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
3612	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
3613	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F
3614	Br	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
3615	Br	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
3616	Br	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
3617	Br	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
3618	Br	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
3619	Br	OCH <sub>3</sub>	Cl	Cl	H
3620	Br	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
3621	Br	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
3622	Br	OCH <sub>3</sub>	Cl	Cl	Cl
3623	Br	OCH <sub>3</sub>	Cl	Cl	Br
3624	Br	OCH <sub>3</sub>	Cl	Cl	F
3625	Br	OCH <sub>3</sub>	Cl	Br	H
3626	Br	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
3627	Br	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
3628	Br	OCH <sub>3</sub>	Cl	Br	Br
3629	Br	OCH <sub>3</sub>	Cl	F	H
3630	Br	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>
3631	Br	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
3632	Br	OCH <sub>3</sub>	Cl	F	Br
3633	Br	OCH <sub>3</sub>	Cl	F	F
3634	Br	OCH <sub>3</sub>	Br	H	H
3635	Br	OCH <sub>3</sub>	Br	H	CH <sub>3</sub>
3636	Br	OCH <sub>3</sub>	Br	H	OCH <sub>3</sub>
3637	Br	OCH <sub>3</sub>	Br	H	Cl
3638	Br	OCH <sub>3</sub>	Br	H	Br
3639	Br	OCH <sub>3</sub>	Br	H	F
3640	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H
3641	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
3642	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
3643	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
3644	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F
3645	Br	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H
3646	Br	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
3647	Br	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3648	Br	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
3649	Br	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F
3650	Br	OCH <sub>3</sub>	Br	Cl	H
3651	Br	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
3652	Br	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
3653	Br	OCH <sub>3</sub>	Br	Cl	Cl
3654	Br	OCH <sub>3</sub>	Br	Cl	F
3655	Br	OCH <sub>3</sub>	Br	Br	H
3656	Br	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>
3657	Br	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
3658	Br	OCH <sub>3</sub>	Br	Br	Cl
3659	Br	OCH <sub>3</sub>	Br	Br	Br
3660	Br	OCH <sub>3</sub>	Br	Br	F
3661	Br	OCH <sub>3</sub>	Br	F	H
3662	Br	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>
3663	Br	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>
3664	Br	OCH <sub>3</sub>	Br	F	Cl
3665	Br	OCH <sub>3</sub>	Br	F	F
3666	Br	OCH <sub>3</sub>	F	H	H
3667	Br	OCH <sub>3</sub>	F	H	CH <sub>3</sub>
3668	Br	OCH <sub>3</sub>	F	H	OCH <sub>3</sub>
3669	Br	OCH <sub>3</sub>	F	H	Cl
3670	Br	OCH <sub>3</sub>	F	H	Br
3671	Br	OCH <sub>3</sub>	F	H	F
3672	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>	H
3673	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
3674	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
3675	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl
3676	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br
3677	Br	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H
3678	Br	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
3679	Br	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
3680	Br	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
3681	Br	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br
3682	Br	OCH <sub>3</sub>	F	Cl	H
3683	Br	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>
3684	Br	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
3685	Br	OCH <sub>3</sub>	F	Cl	Cl
3686	Br	OCH <sub>3</sub>	F	Cl	Br
3687	Br	OCH <sub>3</sub>	F	Br	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3688	Br	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>
3689	Br	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>
3690	Br	OCH <sub>3</sub>	F	Br	Cl
3691	Br	OCH <sub>3</sub>	F	Br	Br
3692	Br	OCH <sub>3</sub>	F	F	H
3693	Br	OCH <sub>3</sub>	F	F	CH <sub>3</sub>
3694	Br	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>
3695	Br	OCH <sub>3</sub>	F	F	Cl
3696	Br	OCH <sub>3</sub>	F	F	Br
3697	Br	OCH <sub>3</sub>	F	F	F
3698	Br	Cl	CH <sub>3</sub>	H	H
3699	Br	Cl	CH <sub>3</sub>	H	CH <sub>3</sub>
3700	Br	Cl	CH <sub>3</sub>	H	OCH <sub>3</sub>
3701	Br	Cl	CH <sub>3</sub>	H	Cl
3702	Br	Cl	CH <sub>3</sub>	H	Br
3703	Br	Cl	CH <sub>3</sub>	H	F
3704	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H
3705	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3706	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
3707	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl
3708	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br
3709	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F
3710	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H
3711	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3712	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
3713	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br
3714	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F
3715	Br	Cl	CH <sub>3</sub>	Cl	H
3716	Br	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
3717	Br	Cl	CH <sub>3</sub>	Cl	Cl
3718	Br	Cl	CH <sub>3</sub>	Cl	Br
3719	Br	Cl	CH <sub>3</sub>	Cl	F
3720	Br	Cl	CH <sub>3</sub>	Br	H
3721	Br	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>
3722	Br	Cl	CH <sub>3</sub>	Br	Cl
3723	Br	Cl	CH <sub>3</sub>	Br	Br
3724	Br	Cl	CH <sub>3</sub>	Br	F
3725	Br	Cl	CH <sub>3</sub>	F	H
3726	Br	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>
3727	Br	Cl	CH <sub>3</sub>	F	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3728	Br	Cl	CH <sub>3</sub>	F	Br
3729	Br	Cl	CH <sub>3</sub>	F	F
3730	Br	Cl	OCH <sub>3</sub>	H	H
3731	Br	Cl	OCH <sub>3</sub>	H	CH <sub>3</sub>
3732	Br	Cl	OCH <sub>3</sub>	H	OCH <sub>3</sub>
3733	Br	Cl	OCH <sub>3</sub>	H	Cl
3734	Br	Cl	OCH <sub>3</sub>	H	Br
3735	Br	Cl	OCH <sub>3</sub>	H	F
3736	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H
3737	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3738	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
3739	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br
3740	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F
3741	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H
3742	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
3743	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3744	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
3745	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
3746	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F
3747	Br	Cl	OCH <sub>3</sub>	Cl	H
3748	Br	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
3749	Br	Cl	OCH <sub>3</sub>	Cl	Cl
3750	Br	Cl	OCH <sub>3</sub>	Cl	Br
3751	Br	Cl	OCH <sub>3</sub>	Cl	F
3752	Br	Cl	OCH <sub>3</sub>	Br	H
3753	Br	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>
3754	Br	Cl	OCH <sub>3</sub>	Br	Cl
3755	Br	Cl	OCH <sub>3</sub>	Br	Br
3756	Br	Cl	OCH <sub>3</sub>	Br	F
3757	Br	Cl	OCH <sub>3</sub>	F	H
3758	Br	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>
3759	Br	Cl	OCH <sub>3</sub>	F	Cl
3760	Br	Cl	OCH <sub>3</sub>	F	Br
3761	Br	Cl	OCH <sub>3</sub>	F	F
3762	Br	Cl	Cl	H	H
3763	Br	Cl	Cl	H	CH <sub>3</sub>
3764	Br	Cl	Cl	H	OCH <sub>3</sub>
3765	Br	Cl	Cl	H	Cl
3766	Br	Cl	Cl	H	Br
3767	Br	Cl	Cl	H	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3768	Br	Cl	Cl	CH <sub>3</sub>	H
3769	Br	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>
3770	Br	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
3771	Br	Cl	Cl	CH <sub>3</sub>	Br
3772	Br	Cl	Cl	CH <sub>3</sub>	F
3773	Br	Cl	Cl	OCH <sub>3</sub>	H
3774	Br	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
3775	Br	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
3776	Br	Cl	Cl	OCH <sub>3</sub>	Br
3777	Br	Cl	Cl	OCH <sub>3</sub>	F
3778	Br	Cl	Cl	Cl	H
3779	Br	Cl	Cl	Cl	CH <sub>3</sub>
3780	Br	Cl	Cl	Cl	OCH <sub>3</sub>
3781	Br	Cl	Cl	Cl	Cl
3782	Br	Cl	Cl	Cl	Br
3783	Br	Cl	Cl	Cl	F
3784	Br	Cl	Cl	Br	H
3785	Br	Cl	Cl	Br	CH <sub>3</sub>
3786	Br	Cl	Cl	Br	OCH <sub>3</sub>
3787	Br	Cl	Cl	Br	Br
3788	Br	Cl	Cl	F	H
3789	Br	Cl	Cl	F	CH <sub>3</sub>
3790	Br	Cl	Cl	F	OCH <sub>3</sub>
3791	Br	Cl	Cl	F	Br
3792	Br	Cl	Cl	F	F
3793	Br	Cl	Br	H	H
3794	Br	Cl	Br	H	CH <sub>3</sub>
3795	Br	Cl	Br	H	OCH <sub>3</sub>
3796	Br	Cl	Br	H	Cl
3797	Br	Cl	Br	H	Br
3798	Br	Cl	Br	H	F
3799	Br	Cl	Br	CH <sub>3</sub>	H
3800	Br	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>
3801	Br	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>
3802	Br	Cl	Br	CH <sub>3</sub>	Cl
3803	Br	Cl	Br	CH <sub>3</sub>	F
3804	Br	Cl	Br	OCH <sub>3</sub>	H
3805	Br	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>
3806	Br	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
3807	Br	Cl	Br	OCH <sub>3</sub>	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3808	Br	Cl	Br	OCH <sub>3</sub>	F
3809	Br	Cl	Br	Cl	H
3810	Br	Cl	Br	Cl	CH <sub>3</sub>
3811	Br	Cl	Br	Cl	OCH <sub>3</sub>
3812	Br	Cl	Br	Cl	Cl
3813	Br	Cl	Br	Cl	F
3814	Br	Cl	Br	Br	H
3815	Br	Cl	Br	Br	CH <sub>3</sub>
3816	Br	Cl	Br	Br	OCH <sub>3</sub>
3817	Br	Cl	Br	Br	Cl
3818	Br	Cl	Br	Br	Br
3819	Br	Cl	Br	Br	F
3820	Br	Cl	Br	F	H
3821	Br	Cl	Br	F	CH <sub>3</sub>
3822	Br	Cl	Br	F	OCH <sub>3</sub>
3823	Br	Cl	Br	F	Cl
3824	Br	Cl	Br	F	F
3825	Br	Cl	F	H	H
3826	Br	Cl	F	H	CH <sub>3</sub>
3827	Br	Cl	F	H	OCH <sub>3</sub>
3828	Br	Cl	F	H	Cl
3829	Br	Cl	F	H	Br
3830	Br	Cl	F	H	F
3831	Br	Cl	F	CH <sub>3</sub>	H
3832	Br	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>
3833	Br	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>
3834	Br	Cl	F	CH <sub>3</sub>	Cl
3835	Br	Cl	F	CH <sub>3</sub>	Br
3836	Br	Cl	F	OCH <sub>3</sub>	H
3837	Br	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>
3838	Br	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>
3839	Br	Cl	F	OCH <sub>3</sub>	Cl
3840	Br	Cl	F	OCH <sub>3</sub>	Br
3841	Br	Cl	F	Cl	H
3842	Br	Cl	F	Cl	CH <sub>3</sub>
3843	Br	Cl	F	Cl	OCH <sub>3</sub>
3844	Br	Cl	F	Cl	Cl
3845	Br	Cl	F	Cl	Br
3846	Br	Cl	F	Br	H
3847	Br	Cl	F	Br	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3848	Br	Cl	F	Br	OCH <sub>3</sub>
3849	Br	Cl	F	Br	Cl
3850	Br	Cl	F	Br	Br
3851	Br	Cl	F	F	H
3852	Br	Cl	F	F	CH <sub>3</sub>
3853	Br	Cl	F	F	OCH <sub>3</sub>
3854	Br	Cl	F	F	Cl
3855	Br	Cl	F	F	Br
3856	Br	Cl	F	F	F
3857	Br	Br	CH <sub>3</sub>	H	H
3858	Br	Br	CH <sub>3</sub>	H	CH <sub>3</sub>
3859	Br	Br	CH <sub>3</sub>	H	OCH <sub>3</sub>
3860	Br	Br	CH <sub>3</sub>	H	Cl
3861	Br	Br	CH <sub>3</sub>	H	Br
3862	Br	Br	CH <sub>3</sub>	H	F
3863	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>	H
3864	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3865	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
3866	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl
3867	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br
3868	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>	F
3869	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H
3870	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3871	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
3872	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br
3873	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F
3874	Br	Br	CH <sub>3</sub>	Cl	H
3875	Br	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
3876	Br	Br	CH <sub>3</sub>	Cl	Cl
3877	Br	Br	CH <sub>3</sub>	Cl	Br
3878	Br	Br	CH <sub>3</sub>	Cl	F
3879	Br	Br	CH <sub>3</sub>	Br	H
3880	Br	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>
3881	Br	Br	CH <sub>3</sub>	Br	Cl
3882	Br	Br	CH <sub>3</sub>	Br	Br
3883	Br	Br	CH <sub>3</sub>	Br	F
3884	Br	Br	CH <sub>3</sub>	F	H
3885	Br	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>
3886	Br	Br	CH <sub>3</sub>	F	Cl
3887	Br	Br	CH <sub>3</sub>	F	Br



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3888	Br	Br	CH <sub>3</sub>	F	F
3889	Br	Br	OCH <sub>3</sub>	H	H
3890	Br	Br	OCH <sub>3</sub>	H	CH <sub>3</sub>
3891	Br	Br	OCH <sub>3</sub>	H	OCH <sub>3</sub>
3892	Br	Br	OCH <sub>3</sub>	H	Cl
3893	Br	Br	OCH <sub>3</sub>	H	Br
3894	Br	Br	OCH <sub>3</sub>	H	F
3895	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H
3896	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
3897	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
3898	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br
3899	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F
3900	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H
3901	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
3902	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
3903	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
3904	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
3905	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F
3906	Br	Br	OCH <sub>3</sub>	Cl	H
3907	Br	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
3908	Br	Br	OCH <sub>3</sub>	Cl	Cl
3909	Br	Br	OCH <sub>3</sub>	Cl	Br
3910	Br	Br	OCH <sub>3</sub>	Cl	F
3911	Br	Br	OCH <sub>3</sub>	Br	H
3912	Br	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>
3913	Br	Br	OCH <sub>3</sub>	Br	Cl
3914	Br	Br	OCH <sub>3</sub>	Br	Br
3915	Br	Br	OCH <sub>3</sub>	Br	F
3916	Br	Br	OCH <sub>3</sub>	F	H
3917	Br	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>
3918	Br	Br	OCH <sub>3</sub>	F	Cl
3919	Br	Br	OCH <sub>3</sub>	F	Br
3920	Br	Br	OCH <sub>3</sub>	F	F
3921	Br	Br	Cl	H	H
3922	Br	Br	Cl	H	CH <sub>3</sub>
3923	Br	Br	Cl	H	OCH <sub>3</sub>
3924	Br	Br	Cl	H	Cl
3925	Br	Br	Cl	H	Br
3926	Br	Br	Cl	H	F
3927	Br	Br	Cl	CH <sub>3</sub>	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3928	Br	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>
3929	Br	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
3930	Br	Br	Cl	CH <sub>3</sub>	Br
3931	Br	Br	Cl	CH <sub>3</sub>	F
3932	Br	Br	Cl	OCH <sub>3</sub>	H
3933	Br	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
3934	Br	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
3935	Br	Br	Cl	OCH <sub>3</sub>	Br
3936	Br	Br	Cl	OCH <sub>3</sub>	F
3937	Br	Br	Cl	Cl	H
3938	Br	Br	Cl	Cl	CH <sub>3</sub>
3939	Br	Br	Cl	Cl	OCH <sub>3</sub>
3940	Br	Br	Cl	Cl	Cl
3941	Br	Br	Cl	Cl	Br
3942	Br	Br	Cl	Cl	F
3943	Br	Br	Cl	Br	H
3944	Br	Br	Cl	Br	CH <sub>3</sub>
3945	Br	Br	Cl	Br	OCH <sub>3</sub>
3946	Br	Br	Cl	Br	Br
3947	Br	Br	Cl	F	H
3948	Br	Br	Cl	F	CH <sub>3</sub>
3949	Br	Br	Cl	F	OCH <sub>3</sub>
3950	Br	Br	Cl	F	Br
3951	Br	Br	Cl	F	F
3952	Br	Br	Br	H	H
3953	Br	Br	Br	H	CH <sub>3</sub>
3954	Br	Br	Br	H	OCH <sub>3</sub>
3955	Br	Br	Br	H	Cl
3956	Br	Br	Br	H	Br
3957	Br	Br	Br	H	F
3958	Br	Br	Br	CH <sub>3</sub>	H
3959	Br	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>
3960	Br	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>
3961	Br	Br	Br	CH <sub>3</sub>	Cl
3962	Br	Br	Br	CH <sub>3</sub>	F
3963	Br	Br	Br	OCH <sub>3</sub>	H
3964	Br	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>
3965	Br	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
3966	Br	Br	Br	OCH <sub>3</sub>	Cl
3967	Br	Br	Br	OCH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
3968	Br	Br	Br		H
3969	Br	Br	Br	Cl	CH <sub>3</sub>
3970	Br	Br	Br	Cl	OCH <sub>3</sub>
3971	Br	Br	Br	Cl	Cl
3972	Br	Br	Br	Cl	F
3973	Br	Br	Br	Br	H
3974	Br	Br	Br	Br	CH <sub>3</sub>
3975	Br	Br	Br	Br	OCH <sub>3</sub>
3976	Br	Br	Br	Br	Cl
3977	Br	Br	Br	Br	Br
3978	Br	Br	Br	Br	F
3979	Br	Br	Br	F	H
3980	Br	Br	Br	F	CH <sub>3</sub>
3981	Br	Br	Br	F	OCH <sub>3</sub>
3982	Br	Br	Br	F	Cl
3983	Br	Br	Br	F	F
3984	Br	Br	F	H	H
3985	Br	Br	F	H	CH <sub>3</sub>
3986	Br	Br	F	H	OCH <sub>3</sub>
3987	Br	Br	F	H	Cl
3988	Br	Br	F	H	Br
3989	Br	Br	F	H	F
3990	Br	Br	F	CH <sub>3</sub>	H
3991	Br	Br	F	CH <sub>3</sub>	CH <sub>3</sub>
3992	Br	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>
3993	Br	Br	F	CH <sub>3</sub>	Cl
3994	Br	Br	F	CH <sub>3</sub>	Br
3995	Br	Br	F	OCH <sub>3</sub>	H
3996	Br	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>
3997	Br	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>
3998	Br	Br	F	OCH <sub>3</sub>	Cl
3999	Br	Br	F	OCH <sub>3</sub>	Br
4000	Br	Br	F	Cl	H
4001	Br	Br	F	Cl	CH <sub>3</sub>
4002	Br	Br	F	Cl	OCH <sub>3</sub>
4003	Br	Br	F	Cl	Cl
4004	Br	Br	F	Cl	Br
4005	Br	Br	F	Br	H
4006	Br	Br	F	Br	CH <sub>3</sub>
4007	Br	Br	F	Br	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4008	Br	Br	F	Br	Cl
4009	Br	Br	F	Br	Br
4010	Br	Br	F	F	H
4011	Br	Br	F	F	CH <sub>3</sub>
4012	Br	Br	F	F	OCH <sub>3</sub>
4013	Br	Br	F	F	Cl
4014	Br	Br	F	F	Br
4015	Br	Br	F	F	F
4016	Br	F	CH <sub>3</sub>	H	H
4017	Br	F	CH <sub>3</sub>	H	CH <sub>3</sub>
4018	Br	F	CH <sub>3</sub>	H	OCH <sub>3</sub>
4019	Br	F	CH <sub>3</sub>	H	Cl
4020	Br	F	CH <sub>3</sub>	H	Br
4021	Br	F	CH <sub>3</sub>	H	F
4022	Br	F	CH <sub>3</sub>	CH <sub>3</sub>	H
4023	Br	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4024	Br	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
4025	Br	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl
4026	Br	F	CH <sub>3</sub>	CH <sub>3</sub>	Br
4027	Br	F	CH <sub>3</sub>	CH <sub>3</sub>	F
4028	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>	H
4029	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4030	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
4031	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br
4032	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>	F
4033	Br	F	CH <sub>3</sub>	Cl	H
4034	Br	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
4035	Br	F	CH <sub>3</sub>	Cl	Cl
4036	Br	F	CH <sub>3</sub>	Cl	Br
4037	Br	F	CH <sub>3</sub>	Cl	F
4038	Br	F	CH <sub>3</sub>	Br	H
4039	Br	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>
4040	Br	F	CH <sub>3</sub>	Br	Cl
4041	Br	F	CH <sub>3</sub>	Br	Br
4042	Br	F	CH <sub>3</sub>	Br	F
4043	Br	F	CH <sub>3</sub>	F	H
4044	Br	F	CH <sub>3</sub>	F	OCH <sub>3</sub>
4045	Br	F	CH <sub>3</sub>	F	Cl
4046	Br	F	CH <sub>3</sub>	F	Br
4047	Br	F	CH <sub>3</sub>	F	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4048	Br	F	OCH <sub>3</sub>	H	H
4049	Br	F	OCH <sub>3</sub>	H	CH <sub>3</sub>
4050	Br	F	OCH <sub>3</sub>	H	OCH <sub>3</sub>
4051	Br	F	OCH <sub>3</sub>	H	Cl
4052	Br	F	OCH <sub>3</sub>	H	Br
4053	Br	F	OCH <sub>3</sub>	H	F
4054	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>	H
4055	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4056	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
4057	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br
4058	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>	F
4059	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H
4060	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
4061	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4062	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
4063	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
4064	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F
4065	Br	F	OCH <sub>3</sub>	Cl	H
4066	Br	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
4067	Br	F	OCH <sub>3</sub>	Cl	Cl
4068	Br	F	OCH <sub>3</sub>	Cl	Br
4069	Br	F	OCH <sub>3</sub>	Cl	F
4070	Br	F	OCH <sub>3</sub>	Br	H
4071	Br	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>
4072	Br	F	OCH <sub>3</sub>	Br	Cl
4073	Br	F	OCH <sub>3</sub>	Br	Br
4074	Br	F	OCH <sub>3</sub>	Br	F
4075	Br	F	OCH <sub>3</sub>	F	H
4076	Br	F	OCH <sub>3</sub>	F	CH <sub>3</sub>
4077	Br	F	OCH <sub>3</sub>	F	Cl
4078	Br	F	OCH <sub>3</sub>	F	Br
4079	Br	F	OCH <sub>3</sub>	F	F
4080	Br	F	Cl	H	H
4081	Br	F	Cl	H	CH <sub>3</sub>
4082	Br	F	Cl	H	OCH <sub>3</sub>
4083	Br	F	Cl	H	Cl
4084	Br	F	Cl	H	Br
4085	Br	F	Cl	H	F
4086	Br	F	Cl	CH <sub>3</sub>	H
4087	Br	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4088	Br	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
4089	Br	F	Cl	CH <sub>3</sub>	Br
4090	Br	F	Cl	CH <sub>3</sub>	F
4091	Br	F	Cl	OCH <sub>3</sub>	H
4092	Br	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
4093	Br	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
4094	Br	F	Cl	OCH <sub>3</sub>	Br
4095	Br	F	Cl	OCH <sub>3</sub>	F
4096	Br	F	Cl	Cl	H
4097	Br	F	Cl	Cl	CH <sub>3</sub>
4098	Br	F	Cl	Cl	OCH <sub>3</sub>
4099	Br	F	Cl	Cl	Cl
4100	Br	F	Cl	Cl	Br
4101	Br	F	Cl	Cl	F
4102	Br	F	Cl	Br	H
4103	Br	F	Cl	Br	CH <sub>3</sub>
4104	Br	F	Cl	Br	OCH <sub>3</sub>
4105	Br	F	Cl	Br	Br
4106	Br	F	Cl	F	H
4107	Br	F	Cl	F	CH <sub>3</sub>
4108	Br	F	Cl	F	OCH <sub>3</sub>
4109	Br	F	Cl	F	Br
4110	Br	F	Cl	F	F
4111	Br	F	Br	H	H
4112	Br	F	Br	H	CH <sub>3</sub>
4113	Br	F	Br	H	OCH <sub>3</sub>
4114	Br	F	Br	H	Cl
4115	Br	F	Br	H	Br
4116	Br	F	Br	H	F
4117	Br	F	Br	CH <sub>3</sub>	H
4118	Br	F	Br	CH <sub>3</sub>	CH <sub>3</sub>
4119	Br	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>
4120	Br	F	Br	CH <sub>3</sub>	Cl
4121	Br	F	Br	CH <sub>3</sub>	F
4122	Br	F	Br	OCH <sub>3</sub>	H
4123	Br	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>
4124	Br	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
4125	Br	F	Br	OCH <sub>3</sub>	Cl
4126	Br	F	Br	OCH <sub>3</sub>	F
4127	Br	F	Br	Cl	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4128	Br	F	Br	Cl	CH <sub>3</sub>
4129	Br	F	Br	Cl	OCH <sub>3</sub>
4130	Br	F	Br	Cl	Cl
4131	Br	F	Br	Cl	F
4132	Br	F	Br	Br	H
4133	Br	F	Br	Br	CH <sub>3</sub>
4134	Br	F	Br	Br	OCH <sub>3</sub>
4135	Br	F	Br	Br	Cl
4136	Br	F	Br	Br	Br
4137	Br	F	Br	Br	F
4138	Br	F	Br	F	H
4139	Br	F	Br	F	CH <sub>3</sub>
4140	Br	F	Br	F	OCH <sub>3</sub>
4141	Br	F	Br	F	Cl
4142	Br	F	Br	F	F
4143	Br	F	F	H	H
4144	Br	F	F	H	CH <sub>3</sub>
4145	Br	F	F	H	OCH <sub>3</sub>
4146	Br	F	F	H	Cl
4147	Br	F	F	H	Br
4148	Br	F	F	H	F
4149	Br	F	F	CH <sub>3</sub>	H
4150	Br	F	F	CH <sub>3</sub>	CH <sub>3</sub>
4151	Br	F	F	CH <sub>3</sub>	OCH <sub>3</sub>
4152	Br	F	F	CH <sub>3</sub>	Cl
4153	Br	F	F	CH <sub>3</sub>	Br
4154	Br	F	F	OCH <sub>3</sub>	H
4155	Br	F	F	OCH <sub>3</sub>	CH <sub>3</sub>
4156	Br	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>
4157	Br	F	F	OCH <sub>3</sub>	Cl
4158	Br	F	F	OCH <sub>3</sub>	Br
4159	Br	F	F	Cl	H
4160	Br	F	F	Cl	CH <sub>3</sub>
4161	Br	F	F	Cl	OCH <sub>3</sub>
4162	Br	F	F	Cl	Cl
4163	Br	F	F	Cl	Br
4164	Br	F	F	Br	H
4165	Br	F	F	Br	CH <sub>3</sub>
4166	Br	F	F	Br	OCH <sub>3</sub>
4167	Br	F	F	Br	Cl



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4168	Br	F	F	Br	Br
4169	Br	F	F	F	H
4170	Br	F	F	F	CH <sub>3</sub>
4171	Br	F	F	F	OCH <sub>3</sub>
4172	Br	F	F	F	Cl
4173	Br	F	F	F	Br
4174	Br	F	F	F	F
4175	F	CH <sub>3</sub>	CH <sub>3</sub>	H	H
4176	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
4177	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
4178	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl	H
4179	F	CH <sub>3</sub>	CH <sub>3</sub>	Br	H
4180	F	CH <sub>3</sub>	CH <sub>3</sub>	F	H
4181	F	CH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
4182	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4183	F	CH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
4184	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
4185	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4186	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
4187	F	CH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
4188	F	CH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
4189	F	CH <sub>3</sub>	CH <sub>3</sub>	H	Cl
4190	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
4191	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
4192	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
4193	F	CH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
4194	F	CH <sub>3</sub>	CH <sub>3</sub>	F	Cl
4195	F	CH <sub>3</sub>	CH <sub>3</sub>	H	Br
4196	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
4197	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
4198	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
4199	F	CH <sub>3</sub>	CH <sub>3</sub>	Br	Br
4200	F	CH <sub>3</sub>	CH <sub>3</sub>	F	Br
4201	F	CH <sub>3</sub>	CH <sub>3</sub>	H	F
4202	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
4203	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
4204	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl	F
4205	F	CH <sub>3</sub>	CH <sub>3</sub>	Br	F
4206	F	CH <sub>3</sub>	CH <sub>3</sub>	F	F
4207	F	CH <sub>3</sub>	OCH <sub>3</sub>	H	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4208	F	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
4209	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
4210	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
4211	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br	H
4212	F	CH <sub>3</sub>	OCH <sub>3</sub>	F	H
4213	F	CH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>
4214	F	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4215	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
4216	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
4217	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
4218	F	CH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
4219	F	CH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
4220	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4221	F	CH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
4222	F	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
4223	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
4224	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
4225	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
4226	F	CH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
4227	F	CH <sub>3</sub>	OCH <sub>3</sub>	H	Br
4228	F	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
4229	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
4230	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
4231	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
4232	F	CH <sub>3</sub>	OCH <sub>3</sub>	F	Br
4233	F	CH <sub>3</sub>	OCH <sub>3</sub>	H	F
4234	F	CH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
4235	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
4236	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
4237	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br	F
4238	F	CH <sub>3</sub>	OCH <sub>3</sub>	F	F
4239	F	CH <sub>3</sub>	Cl	H	H
4240	F	CH <sub>3</sub>	Cl	CH <sub>3</sub>	H
4241	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
4242	F	CH <sub>3</sub>	Cl	Cl	H
4243	F	CH <sub>3</sub>	Cl	Br	H
4244	F	CH <sub>3</sub>	Cl	F	H
4245	F	CH <sub>3</sub>	Cl	H	CH <sub>3</sub>
4246	F	CH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
4247	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4248	F	CH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
4249	F	CH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
4250	F	CH <sub>3</sub>	Cl	F	CH <sub>3</sub>
4251	F	CH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
4252	F	CH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
4253	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
4254	F	CH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
4255	F	CH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
4256	F	CH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
4257	F	CH <sub>3</sub>	Cl	H	Cl
4258	F	CH <sub>3</sub>	Cl	Cl	Cl
4259	F	CH <sub>3</sub>	Cl	H	Br
4260	F	CH <sub>3</sub>	Cl	CH <sub>3</sub>	Br
4261	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
4262	F	CH <sub>3</sub>	Cl	Cl	Br
4263	F	CH <sub>3</sub>	Cl	Br	Br
4264	F	CH <sub>3</sub>	Cl	F	Br
4265	F	CH <sub>3</sub>	Cl	H	F
4266	F	CH <sub>3</sub>	Cl	CH <sub>3</sub>	F
4267	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
4268	F	CH <sub>3</sub>	Cl	Cl	F
4269	F	CH <sub>3</sub>	Cl	F	F
4270	F	CH <sub>3</sub>	Br	H	H
4271	F	CH <sub>3</sub>	Br	CH <sub>3</sub>	H
4272	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>	H
4273	F	CH <sub>3</sub>	Br	Cl	H
4274	F	CH <sub>3</sub>	Br	Br	H
4275	F	CH <sub>3</sub>	Br	F	H
4276	F	CH <sub>3</sub>	Br	H	CH <sub>3</sub>
4277	F	CH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
4278	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
4279	F	CH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
4280	F	CH <sub>3</sub>	Br	Br	CH <sub>3</sub>
4281	F	CH <sub>3</sub>	Br	F	CH <sub>3</sub>
4282	F	CH <sub>3</sub>	Br	H	OCH <sub>3</sub>
4283	F	CH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
4284	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
4285	F	CH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>
4286	F	CH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
4287	F	CH <sub>3</sub>	Br	F	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4288	F	CH <sub>3</sub>	Br	H	Cl
4289	F	CH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
4290	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
4291	F	CH <sub>3</sub>	Br	Cl	Cl
4292	F	CH <sub>3</sub>	Br	Br	Cl
4293	F	CH <sub>3</sub>	Br	F	Cl
4294	F	CH <sub>3</sub>	Br	H	Br
4295	F	CH <sub>3</sub>	Br	Br	Br
4296	F	CH <sub>3</sub>	Br	H	F
4297	F	CH <sub>3</sub>	Br	CH <sub>3</sub>	F
4298	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>	F
4299	F	CH <sub>3</sub>	Br	Cl	F
4300	F	CH <sub>3</sub>	Br	Br	F
4301	F	CH <sub>3</sub>	Br	F	F
4302	F	CH <sub>3</sub>	F	H	H
4303	F	CH <sub>3</sub>	F	CH <sub>3</sub>	H
4304	F	CH <sub>3</sub>	F	OCH <sub>3</sub>	H
4305	F	CH <sub>3</sub>	F	Cl	H
4306	F	CH <sub>3</sub>	F	Br	H
4307	F	CH <sub>3</sub>	F	F	H
4308	F	CH <sub>3</sub>	F	H	CH <sub>3</sub>
4309	F	CH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
4310	F	CH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
4311	F	CH <sub>3</sub>	F	Cl	CH <sub>3</sub>
4312	F	CH <sub>3</sub>	F	Br	CH <sub>3</sub>
4313	F	CH <sub>3</sub>	F	F	CH <sub>3</sub>
4314	F	CH <sub>3</sub>	F	H	OCH <sub>3</sub>
4315	F	CH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
4316	F	CH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
4317	F	CH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
4318	F	CH <sub>3</sub>	F	Br	OCH <sub>3</sub>
4319	F	CH <sub>3</sub>	F	F	OCH <sub>3</sub>
4320	F	CH <sub>3</sub>	F	H	Cl
4321	F	CH <sub>3</sub>	F	CH <sub>3</sub>	Cl
4322	F	CH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
4323	F	CH <sub>3</sub>	F	Cl	Cl
4324	F	CH <sub>3</sub>	F	Br	Cl
4325	F	CH <sub>3</sub>	F	F	Cl
4326	F	CH <sub>3</sub>	F	H	Br
4327	F	CH <sub>3</sub>	F	CH <sub>3</sub>	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4328	F	CH <sub>3</sub>	F	OCH <sub>3</sub>	Br
4329	F	CH <sub>3</sub>	F	Cl	Br
4330	F	CH <sub>3</sub>	F	Br	Br
4331	F	CH <sub>3</sub>	F	F	Br
4332	F	CH <sub>3</sub>	F	H	F
4333	F	CH <sub>3</sub>	F	F	F
4334	F	OCH <sub>3</sub>	CH <sub>3</sub>	H	H
4335	F	OCH <sub>3</sub>	CH <sub>3</sub>	H	CH <sub>3</sub>
4336	F	OCH <sub>3</sub>	CH <sub>3</sub>	H	OCH <sub>3</sub>
4337	F	OCH <sub>3</sub>	CH <sub>3</sub>	H	Cl
4338	F	OCH <sub>3</sub>	CH <sub>3</sub>	H	Br
4339	F	OCH <sub>3</sub>	CH <sub>3</sub>	H	F
4340	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	H
4341	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4342	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
4343	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Cl
4344	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	Br
4345	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>	F
4346	F	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	H
4347	F	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4348	F	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
4349	F	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	Br
4350	F	OCH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>	F
4351	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	H
4352	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
4353	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Cl
4354	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	Br
4355	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl	F
4356	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br	H
4357	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br	OCH <sub>3</sub>
4358	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Cl
4359	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br	Br
4360	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br	F
4361	F	OCH <sub>3</sub>	CH <sub>3</sub>	F	H
4362	F	OCH <sub>3</sub>	CH <sub>3</sub>	F	OCH <sub>3</sub>
4363	F	OCH <sub>3</sub>	CH <sub>3</sub>	F	Cl
4364	F	OCH <sub>3</sub>	CH <sub>3</sub>	F	Br
4365	F	OCH <sub>3</sub>	CH <sub>3</sub>	F	F
4366	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H	H
4367	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4368	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H	OCH <sub>3</sub>
4369	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Cl
4370	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H	Br
4371	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H	F
4372	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	H
4373	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4374	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
4375	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	Br
4376	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>	F
4377	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	H
4378	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
4379	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4380	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
4381	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
4382	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>	F
4383	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	H
4384	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
4385	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Cl
4386	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	Br
4387	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl	F
4388	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	H
4389	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	CH <sub>3</sub>
4390	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Cl
4391	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	Br
4392	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br	F
4393	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F	H
4394	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F	CH <sub>3</sub>
4395	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Cl
4396	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F	Br
4397	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F	F
4398	F	OCH <sub>3</sub>	Cl	H	H
4399	F	OCH <sub>3</sub>	Cl	H	CH <sub>3</sub>
4400	F	OCH <sub>3</sub>	Cl	H	OCH <sub>3</sub>
4401	F	OCH <sub>3</sub>	Cl	H	Cl
4402	F	OCH <sub>3</sub>	Cl	H	Br
4403	F	OCH <sub>3</sub>	Cl	H	F
4404	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	H
4405	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	CH <sub>3</sub>
4406	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
4407	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	Br

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4408	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>	F
4409	F	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	H
4410	F	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
4411	F	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
4412	F	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	Br
4413	F	OCH <sub>3</sub>	Cl	OCH <sub>3</sub>	F
4414	F	OCH <sub>3</sub>	Cl	Cl	H
4415	F	OCH <sub>3</sub>	Cl	Cl	CH <sub>3</sub>
4416	F	OCH <sub>3</sub>	Cl	Cl	OCH <sub>3</sub>
4417	F	OCH <sub>3</sub>	Cl	Cl	Cl
4418	F	OCH <sub>3</sub>	Cl	Cl	Br
4419	F	OCH <sub>3</sub>	Cl	Cl	F
4420	F	OCH <sub>3</sub>	Cl	Br	H
4421	F	OCH <sub>3</sub>	Cl	Br	CH <sub>3</sub>
4422	F	OCH <sub>3</sub>	Cl	Br	OCH <sub>3</sub>
4423	F	OCH <sub>3</sub>	Cl	Br	Br
4424	F	OCH <sub>3</sub>	Cl	F	H
4425	F	OCH <sub>3</sub>	Cl	F	CH <sub>3</sub>
4426	F	OCH <sub>3</sub>	Cl	F	OCH <sub>3</sub>
4427	F	OCH <sub>3</sub>	Cl	F	Br
4428	F	OCH <sub>3</sub>	Cl	F	F
4429	F	OCH <sub>3</sub>	Br	H	H
4430	F	OCH <sub>3</sub>	Br	H	CH <sub>3</sub>
4431	F	OCH <sub>3</sub>	Br	H	OCH <sub>3</sub>
4432	F	OCH <sub>3</sub>	Br	H	Cl
4433	F	OCH <sub>3</sub>	Br	H	Br
4434	F	OCH <sub>3</sub>	Br	H	F
4435	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>	H
4436	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>	CH <sub>3</sub>
4437	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>	OCH <sub>3</sub>
4438	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>	Cl
4439	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>	F
4440	F	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	H
4441	F	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	CH <sub>3</sub>
4442	F	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
4443	F	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	Cl
4444	F	OCH <sub>3</sub>	Br	OCH <sub>3</sub>	F
4445	F	OCH <sub>3</sub>	Br	Cl	H
4446	F	OCH <sub>3</sub>	Br	Cl	CH <sub>3</sub>
4447	F	OCH <sub>3</sub>	Br	Cl	OCH <sub>3</sub>



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4448	F	OCH <sub>3</sub>	Br	Cl	Cl
4449	F	OCH <sub>3</sub>	Br	Cl	F
4450	F	OCH <sub>3</sub>	Br	Br	H
4451	F	OCH <sub>3</sub>	Br	Br	CH <sub>3</sub>
4452	F	OCH <sub>3</sub>	Br	Br	OCH <sub>3</sub>
4453	F	OCH <sub>3</sub>	Br	Br	Cl
4454	F	OCH <sub>3</sub>	Br	Br	Br
4455	F	OCH <sub>3</sub>	Br	Br	F
4456	F	OCH <sub>3</sub>	Br	F	H
4457	F	OCH <sub>3</sub>	Br	F	CH <sub>3</sub>
4458	F	OCH <sub>3</sub>	Br	F	OCH <sub>3</sub>
4459	F	OCH <sub>3</sub>	Br	F	Cl
4460	F	OCH <sub>3</sub>	Br	F	F
4461	F	OCH <sub>3</sub>	F	H	H
4462	F	OCH <sub>3</sub>	F	H	CH <sub>3</sub>
4463	F	OCH <sub>3</sub>	F	H	OCH <sub>3</sub>
4464	F	OCH <sub>3</sub>	F	H	Cl
4465	F	OCH <sub>3</sub>	F	H	Br
4466	F	OCH <sub>3</sub>	F	H	F
4467	F	OCH <sub>3</sub>	F	CH <sub>3</sub>	H
4468	F	OCH <sub>3</sub>	F	CH <sub>3</sub>	CH <sub>3</sub>
4469	F	OCH <sub>3</sub>	F	CH <sub>3</sub>	OCH <sub>3</sub>
4470	F	OCH <sub>3</sub>	F	CH <sub>3</sub>	Cl
4471	F	OCH <sub>3</sub>	F	CH <sub>3</sub>	Br
4472	F	OCH <sub>3</sub>	F	OCH <sub>3</sub>	H
4473	F	OCH <sub>3</sub>	F	OCH <sub>3</sub>	CH <sub>3</sub>
4474	F	OCH <sub>3</sub>	F	OCH <sub>3</sub>	OCH <sub>3</sub>
4475	F	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Cl
4476	F	OCH <sub>3</sub>	F	OCH <sub>3</sub>	Br
4477	F	OCH <sub>3</sub>	F	Cl	H
4478	F	OCH <sub>3</sub>	F	Cl	CH <sub>3</sub>
4479	F	OCH <sub>3</sub>	F	Cl	OCH <sub>3</sub>
4480	F	OCH <sub>3</sub>	F	Cl	Cl
4481	F	OCH <sub>3</sub>	F	Cl	Br
4482	F	OCH <sub>3</sub>	F	Br	H
4483	F	OCH <sub>3</sub>	F	Br	CH <sub>3</sub>
4484	F	OCH <sub>3</sub>	F	Br	OCH <sub>3</sub>
4485	F	OCH <sub>3</sub>	F	Br	Cl
4486	F	OCH <sub>3</sub>	F	Br	Br
4487	F	OCH <sub>3</sub>	F	F	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4488	F	OCH <sub>3</sub>	F	F	CH <sub>3</sub>
4489	F	OCH <sub>3</sub>	F	F	OCH <sub>3</sub>
4490	F	OCH <sub>3</sub>	F	F	Cl
4491	F	OCH <sub>3</sub>	F	F	Br
4492	F	OCH <sub>3</sub>	F	F	F
4493	F	Cl	CH <sub>3</sub>	H	H
4494	F	Cl	CH <sub>3</sub>	H	CH <sub>3</sub>
4495	F	Cl	CH <sub>3</sub>	H	OCH <sub>3</sub>
4496	F	Cl	CH <sub>3</sub>	H	Cl
4497	F	Cl	CH <sub>3</sub>	H	Br
4498	F	Cl	CH <sub>3</sub>	H	F
4499	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>	H
4500	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4501	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
4502	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Cl
4503	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>	Br
4504	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>	F
4505	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	H
4506	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4507	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
4508	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	Br
4509	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>	F
4510	F	Cl	CH <sub>3</sub>	Cl	H
4511	F	Cl	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
4512	F	Cl	CH <sub>3</sub>	Cl	Cl
4513	F	Cl	CH <sub>3</sub>	Cl	Br
4514	F	Cl	CH <sub>3</sub>	Cl	F
4515	F	Cl	CH <sub>3</sub>	Br	H
4516	F	Cl	CH <sub>3</sub>	Br	OCH <sub>3</sub>
4517	F	Cl	CH <sub>3</sub>	Br	Cl
4518	F	Cl	CH <sub>3</sub>	Br	Br
4519	F	Cl	CH <sub>3</sub>	Br	F
4520	F	Cl	CH <sub>3</sub>	F	H
4521	F	Cl	CH <sub>3</sub>	F	OCH <sub>3</sub>
4522	F	Cl	CH <sub>3</sub>	F	Cl
4523	F	Cl	CH <sub>3</sub>	F	Br
4524	F	Cl	CH <sub>3</sub>	F	F
4525	F	Cl	OCH <sub>3</sub>	H	H
4526	F	Cl	OCH <sub>3</sub>	H	CH <sub>3</sub>
4527	F	Cl	OCH <sub>3</sub>	H	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4528	F	Cl	OCH <sub>3</sub>	H	Cl
4529	F	Cl	OCH <sub>3</sub>	H	Br
4530	F	Cl	OCH <sub>3</sub>	H	F
4531	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	H
4532	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4533	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
4534	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	Br
4535	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>	F
4536	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	H
4537	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
4538	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4539	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
4540	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
4541	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>	F
4542	F	Cl	OCH <sub>3</sub>	Cl	H
4543	F	Cl	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
4544	F	Cl	OCH <sub>3</sub>	Cl	Cl
4545	F	Cl	OCH <sub>3</sub>	Cl	Br
4546	F	Cl	OCH <sub>3</sub>	Cl	F
4547	F	Cl	OCH <sub>3</sub>	Br	H
4548	F	Cl	OCH <sub>3</sub>	Br	CH <sub>3</sub>
4549	F	Cl	OCH <sub>3</sub>	Br	Cl
4550	F	Cl	OCH <sub>3</sub>	Br	Br
4551	F	Cl	OCH <sub>3</sub>	Br	F
4552	F	Cl	OCH <sub>3</sub>	F	H
4553	F	Cl	OCH <sub>3</sub>	F	CH <sub>3</sub>
4554	F	Cl	OCH <sub>3</sub>	F	Cl
4555	F	Cl	OCH <sub>3</sub>	F	Br
4556	F	Cl	OCH <sub>3</sub>	F	F
4557	F	Cl	Cl	H	H
4558	F	Cl	Cl	H	CH <sub>3</sub>
4559	F	Cl	Cl	H	OCH <sub>3</sub>
4560	F	Cl	Cl	H	Cl
4561	F	Cl	Cl	H	Br
4562	F	Cl	Cl	H	F
4563	F	Cl	Cl	CH <sub>3</sub>	H
4564	F	Cl	Cl	CH <sub>3</sub>	CH <sub>3</sub>
4565	F	Cl	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
4566	F	Cl	Cl	CH <sub>3</sub>	Br
4567	F	Cl	Cl	CH <sub>3</sub>	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4568	F	Cl	Cl	OCH <sub>3</sub>	H
4569	F	Cl	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
4570	F	Cl	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
4571	F	Cl	Cl	OCH <sub>3</sub>	Br
4572	F	Cl	Cl	OCH <sub>3</sub>	F
4573	F	Cl	Cl	Cl	H
4574	F	Cl	Cl	Cl	CH <sub>3</sub>
4575	F	Cl	Cl	Cl	OCH <sub>3</sub>
4576	F	Cl	Cl	Cl	Cl
4577	F	Cl	Cl	Cl	Br
4578	F	Cl	Cl	Cl	F
4579	F	Cl	Cl	Br	H
4580	F	Cl	Cl	Br	CH <sub>3</sub>
4581	F	Cl	Cl	Br	OCH <sub>3</sub>
4582	F	Cl	Cl	Br	Br
4583	F	Cl	Cl	F	H
4584	F	Cl	Cl	F	CH <sub>3</sub>
4585	F	Cl	Cl	F	OCH <sub>3</sub>
4586	F	Cl	Cl	F	Br
4587	F	Cl	Cl	F	F
4588	F	Cl	Br	H	H
4589	F	Cl	Br	H	CH <sub>3</sub>
4590	F	Cl	Br	H	OCH <sub>3</sub>
4591	F	Cl	Br	H	Cl
4592	F	Cl	Br	H	Br
4593	F	Cl	Br	H	F
4594	F	Cl	Br	CH <sub>3</sub>	H
4595	F	Cl	Br	CH <sub>3</sub>	CH <sub>3</sub>
4596	F	Cl	Br	CH <sub>3</sub>	OCH <sub>3</sub>
4597	F	Cl	Br	CH <sub>3</sub>	Cl
4598	F	Cl	Br	CH <sub>3</sub>	F
4599	F	Cl	Br	OCH <sub>3</sub>	H
4600	F	Cl	Br	OCH <sub>3</sub>	CH <sub>3</sub>
4601	F	Cl	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
4602	F	Cl	Br	OCH <sub>3</sub>	Cl
4603	F	Cl	Br	OCH <sub>3</sub>	F
4604	F	Cl	Br	Cl	H
4605	F	Cl	Br	Cl	CH <sub>3</sub>
4606	F	Cl	Br	Cl	OCH <sub>3</sub>
4607	F	Cl	Br	Cl	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4608	F	Cl	Br	Cl	F
4609	F	Cl	Br	Br	H
4610	F	Cl	Br	Br	CH <sub>3</sub>
4611	F	Cl	Br	Br	OCH <sub>3</sub>
4612	F	Cl	Br	Br	Cl
4613	F	Cl	Br	Br	Br
4614	F	Cl	Br	Br	F
4615	F	Cl	Br	F	H
4616	F	Cl	Br	F	CH <sub>3</sub>
4617	F	Cl	Br	F	OCH <sub>3</sub>
4618	F	Cl	Br	F	Cl
4619	F	Cl	Br	F	F
4620	F	Cl	F	H	H
4621	F	Cl	F	H	CH <sub>3</sub>
4622	F	Cl	F	H	OCH <sub>3</sub>
4623	F	Cl	F	H	Cl
4624	F	Cl	F	H	Br
4625	F	Cl	F	H	F
4626	F	Cl	F	CH <sub>3</sub>	H
4627	F	Cl	F	CH <sub>3</sub>	CH <sub>3</sub>
4628	F	Cl	F	CH <sub>3</sub>	OCH <sub>3</sub>
4629	F	Cl	F	CH <sub>3</sub>	Cl
4630	F	Cl	F	CH <sub>3</sub>	Br
4631	F	Cl	F	OCH <sub>3</sub>	H
4632	F	Cl	F	OCH <sub>3</sub>	CH <sub>3</sub>
4633	F	Cl	F	OCH <sub>3</sub>	OCH <sub>3</sub>
4634	F	Cl	F	OCH <sub>3</sub>	Cl
4635	F	Cl	F	OCH <sub>3</sub>	Br
4636	F	Cl	F	Cl	H
4637	F	Cl	F	Cl	CH <sub>3</sub>
4638	F	Cl	F	Cl	OCH <sub>3</sub>
4639	F	Cl	F	Cl	Cl
4640	F	Cl	F	Cl	Br
4641	F	Cl	F	Br	H
4642	F	Cl	F	Br	CH <sub>3</sub>
4643	F	Cl	F	Br	OCH <sub>3</sub>
4644	F	Cl	F	Br	Cl
4645	F	Cl	F	Br	Br
4646	F	Cl	F	F	H
4647	F	Cl	F	F	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4648	F	Cl	F	F	OCH <sub>3</sub>
4649	F	Cl	F	F	Cl
4650	F	Cl	F	F	Br
4651	F	Cl	F	F	F
4652	F	Br	CH <sub>3</sub>	H	H
4653	F	Br	CH <sub>3</sub>	H	CH <sub>3</sub>
4654	F	Br	CH <sub>3</sub>	H	OCH <sub>3</sub>
4655	F	Br	CH <sub>3</sub>	H	Cl
4656	F	Br	CH <sub>3</sub>	H	Br
4657	F	Br	CH <sub>3</sub>	H	F
4658	F	Br	CH <sub>3</sub>	CH <sub>3</sub>	H
4659	F	Br	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4660	F	Br	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
4661	F	Br	CH <sub>3</sub>	CH <sub>3</sub>	Cl
4662	F	Br	CH <sub>3</sub>	CH <sub>3</sub>	Br
4663	F	Br	CH <sub>3</sub>	CH <sub>3</sub>	F
4664	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>	H
4665	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4666	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
4667	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>	Br
4668	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>	F
4669	F	Br	CH <sub>3</sub>	Cl	H
4670	F	Br	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
4671	F	Br	CH <sub>3</sub>	Cl	Cl
4672	F	Br	CH <sub>3</sub>	Cl	Br
4673	F	Br	CH <sub>3</sub>	Cl	F
4674	F	Br	CH <sub>3</sub>	Br	H
4675	F	Br	CH <sub>3</sub>	Br	OCH <sub>3</sub>
4676	F	Br	CH <sub>3</sub>	Br	Cl
4677	F	Br	CH <sub>3</sub>	Br	Br
4678	F	Br	CH <sub>3</sub>	Br	F
4679	F	Br	CH <sub>3</sub>	F	H
4680	F	Br	CH <sub>3</sub>	F	OCH <sub>3</sub>
4681	F	Br	CH <sub>3</sub>	F	Cl
4682	F	Br	CH <sub>3</sub>	F	Br
4683	F	Br	CH <sub>3</sub>	F	F
4684	F	Br	OCH <sub>3</sub>	H	H
4685	F	Br	OCH <sub>3</sub>	H	CH <sub>3</sub>
4686	F	Br	OCH <sub>3</sub>	H	OCH <sub>3</sub>
4687	F	Br	OCH <sub>3</sub>	H	Cl

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4688	F	Br	OCH <sub>3</sub>	H	Br
4689	F	Br	OCH <sub>3</sub>	H	F
4690	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>	H
4691	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4692	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
4693	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>	Br
4694	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>	F
4695	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	H
4696	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
4697	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4698	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
4699	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
4700	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>	F
4701	F	Br	OCH <sub>3</sub>	Cl	H
4702	F	Br	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
4703	F	Br	OCH <sub>3</sub>	Cl	Cl
4704	F	Br	OCH <sub>3</sub>	Cl	Br
4705	F	Br	OCH <sub>3</sub>	Cl	F
4706	F	Br	OCH <sub>3</sub>	Br	H
4707	F	Br	OCH <sub>3</sub>	Br	CH <sub>3</sub>
4708	F	Br	OCH <sub>3</sub>	Br	Cl
4709	F	Br	OCH <sub>3</sub>	Br	Br
4710	F	Br	OCH <sub>3</sub>	Br	F
4711	F	Br	OCH <sub>3</sub>	F	H
4712	F	Br	OCH <sub>3</sub>	F	CH <sub>3</sub>
4713	F	Br	OCH <sub>3</sub>	F	Cl
4714	F	Br	OCH <sub>3</sub>	F	Br
4715	F	Br	OCH <sub>3</sub>	F	F
4716	F	Br	Cl	H	H
4717	F	Br	Cl	H	CH <sub>3</sub>
4718	F	Br	Cl	H	OCH <sub>3</sub>
4719	F	Br	Cl	H	Cl
4720	F	Br	Cl	H	Br
4721	F	Br	Cl	H	F
4722	F	Br	Cl	CH <sub>3</sub>	H
4723	F	Br	Cl	CH <sub>3</sub>	CH <sub>3</sub>
4724	F	Br	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
4725	F	Br	Cl	CH <sub>3</sub>	Br
4726	F	Br	Cl	CH <sub>3</sub>	F
4727	F	Br	Cl	OCH <sub>3</sub>	H



Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4728	F	Br	Cl	OCH <sub>3</sub>	CH <sub>3</sub>
4729	F	Br	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
4730	F	Br	Cl	OCH <sub>3</sub>	Br
4731	F	Br	Cl	OCH <sub>3</sub>	F
4732	F	Br	Cl	Cl	H
4733	F	Br	Cl	Cl	CH <sub>3</sub>
4734	F	Br	Cl	Cl	OCH <sub>3</sub>
4735	F	Br	Cl	Cl	Cl
4736	F	Br	Cl	Cl	Br
4737	F	Br	Cl	Cl	F
4738	F	Br	Cl	Br	H
4739	F	Br	Cl	Br	CH <sub>3</sub>
4740	F	Br	Cl	Br	OCH <sub>3</sub>
4741	F	Br	Cl	Br	Br
4742	F	Br	Cl	F	H
4743	F	Br	Cl	F	CH <sub>3</sub>
4744	F	Br	Cl	F	OCH <sub>3</sub>
4745	F	Br	Cl	F	Br
4746	F	Br	Cl	F	F
4747	F	Br	Br	H	H
4748	F	Br	Br	H	CH <sub>3</sub>
4749	F	Br	Br	H	OCH <sub>3</sub>
4750	F	Br	Br	H	Cl
4751	F	Br	Br	H	Br
4752	F	Br	Br	H	F
4753	F	Br	Br	CH <sub>3</sub>	H
4754	F	Br	Br	CH <sub>3</sub>	CH <sub>3</sub>
4755	F	Br	Br	CH <sub>3</sub>	OCH <sub>3</sub>
4756	F	Br	Br	CH <sub>3</sub>	Cl
4757	F	Br	Br	CH <sub>3</sub>	F
4758	F	Br	Br	OCH <sub>3</sub>	H
4759	F	Br	Br	OCH <sub>3</sub>	CH <sub>3</sub>
4760	F	Br	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
4761	F	Br	Br	OCH <sub>3</sub>	Cl
4762	F	Br	Br	OCH <sub>3</sub>	F
4763	F	Br	Br	Cl	H
4764	F	Br	Br	Cl	CH <sub>3</sub>
4765	F	Br	Br	Cl	OCH <sub>3</sub>
4766	F	Br	Br	Cl	Cl
4767	F	Br	Br	Cl	F

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4768	F	Br	Br	Br	H
4769	F	Br	Br	Br	CH <sub>3</sub>
4770	F	Br	Br	Br	OCH <sub>3</sub>
4771	F	Br	Br	Br	Cl
4772	F	Br	Br	Br	Br
4773	F	Br	Br	Br	F
4774	F	Br	Br	F	H
4775	F	Br	Br	F	CH <sub>3</sub>
4776	F	Br	Br	F	OCH <sub>3</sub>
4777	F	Br	Br	F	Cl
4778	F	Br	Br	F	F
4779	F	Br	F	H	H
4780	F	Br	F	H	CH <sub>3</sub>
4781	F	Br	F	H	OCH <sub>3</sub>
4782	F	Br	F	H	Cl
4783	F	Br	F	H	Br
4784	F	Br	F	H	F
4785	F	Br	F	CH <sub>3</sub>	H
4786	F	Br	F	CH <sub>3</sub>	CH <sub>3</sub>
4787	F	Br	F	CH <sub>3</sub>	OCH <sub>3</sub>
4788	F	Br	F	CH <sub>3</sub>	Cl
4789	F	Br	F	CH <sub>3</sub>	Br
4790	F	Br	F	OCH <sub>3</sub>	H
4791	F	Br	F	OCH <sub>3</sub>	CH <sub>3</sub>
4792	F	Br	F	OCH <sub>3</sub>	OCH <sub>3</sub>
4793	F	Br	F	OCH <sub>3</sub>	Cl
4794	F	Br	F	OCH <sub>3</sub>	Br
4795	F	Br	F	Cl	H
4796	F	Br	F	Cl	CH <sub>3</sub>
4797	F	Br	F	Cl	OCH <sub>3</sub>
4798	F	Br	F	Cl	Cl
4799	F	Br	F	Cl	Br
4800	F	Br	F	Br	H
4801	F	Br	F	Br	CH <sub>3</sub>
4802	F	Br	F	Br	OCH <sub>3</sub>
4803	F	Br	F	Br	Cl
4804	F	Br	F	Br	Br
4805	F	Br	F	F	H
4806	F	Br	F	F	CH <sub>3</sub>
4807	F	Br	F	F	OCH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4808	F	Br	F	F	Cl
4809	F	Br	F	F	Br
4810	F	Br	F	F	F
4811	F	F	CH <sub>3</sub>	H	H
4812	F	F	CH <sub>3</sub>	H	CH <sub>3</sub>
4813	F	F	CH <sub>3</sub>	H	OCH <sub>3</sub>
4814	F	F	CH <sub>3</sub>	H	Cl
4815	F	F	CH <sub>3</sub>	H	Br
4816	F	F	CH <sub>3</sub>	H	F
4817	F	F	CH <sub>3</sub>	CH <sub>3</sub>	H
4818	F	F	CH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4819	F	F	CH <sub>3</sub>	CH <sub>3</sub>	OCH <sub>3</sub>
4820	F	F	CH <sub>3</sub>	CH <sub>3</sub>	Cl
4821	F	F	CH <sub>3</sub>	CH <sub>3</sub>	Br
4822	F	F	CH <sub>3</sub>	CH <sub>3</sub>	F
4823	F	F	CH <sub>3</sub>	OCH <sub>3</sub>	H
4824	F	F	CH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4825	F	F	CH <sub>3</sub>	OCH <sub>3</sub>	Cl
4826	F	F	CH <sub>3</sub>	OCH <sub>3</sub>	Br
4827	F	F	CH <sub>3</sub>	OCH <sub>3</sub>	F
4828	F	F	CH <sub>3</sub>	Cl	H
4829	F	F	CH <sub>3</sub>	Cl	OCH <sub>3</sub>
4830	F	F	CH <sub>3</sub>	Cl	Cl
4831	F	F	CH <sub>3</sub>	Cl	Br
4832	F	F	CH <sub>3</sub>	Cl	F
4833	F	F	CH <sub>3</sub>	Br	H
4834	F	F	CH <sub>3</sub>	Br	OCH <sub>3</sub>
4835	F	F	CH <sub>3</sub>	Br	Cl
4836	F	F	CH <sub>3</sub>	Br	Br
4837	F	F	CH <sub>3</sub>	Br	F
4838	F	F	CH <sub>3</sub>	F	H
4839	F	F	CH <sub>3</sub>	F	OCH <sub>3</sub>
4840	F	F	CH <sub>3</sub>	F	Cl
4841	F	F	CH <sub>3</sub>	F	Br
4842	F	F	CH <sub>3</sub>	F	F
4843	F	F	OCH <sub>3</sub>	H	H
4844	F	F	OCH <sub>3</sub>	H	CH <sub>3</sub>
4845	F	F	OCH <sub>3</sub>	H	OCH <sub>3</sub>
4846	F	F	OCH <sub>3</sub>	H	Cl
4847	F	F	OCH <sub>3</sub>	H	Br

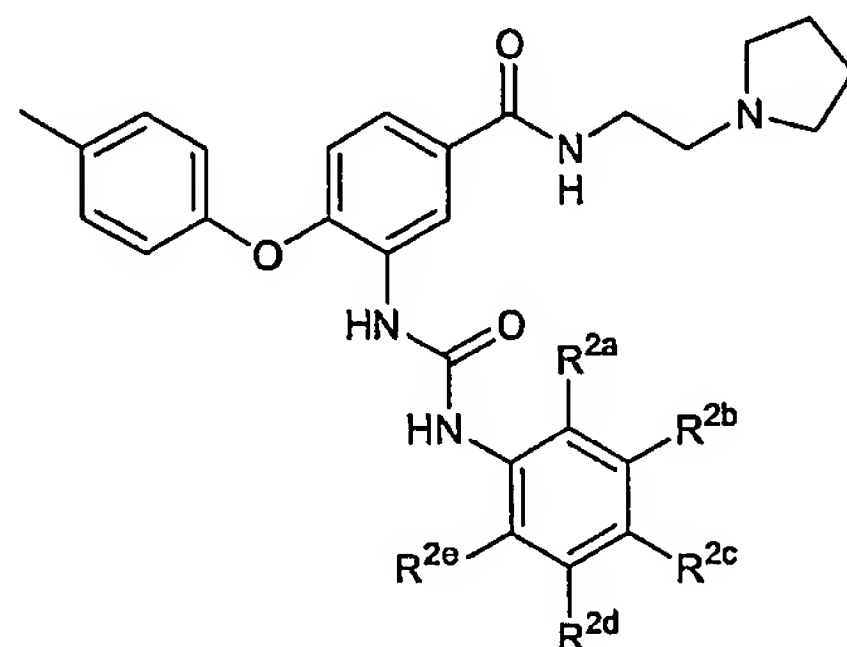
Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4848	F	F	OCH <sub>3</sub>	H	F
4849	F	F	OCH <sub>3</sub>	CH <sub>3</sub>	H
4850	F	F	OCH <sub>3</sub>	CH <sub>3</sub>	CH <sub>3</sub>
4851	F	F	OCH <sub>3</sub>	CH <sub>3</sub>	Cl
4852	F	F	OCH <sub>3</sub>	CH <sub>3</sub>	Br
4853	F	F	OCH <sub>3</sub>	CH <sub>3</sub>	F
4854	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>	H
4855	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>	CH <sub>3</sub>
4856	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>	OCH <sub>3</sub>
4857	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Cl
4858	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>	Br
4859	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>	F
4860	F	F	OCH <sub>3</sub>	Cl	H
4861	F	F	OCH <sub>3</sub>	Cl	CH <sub>3</sub>
4862	F	F	OCH <sub>3</sub>	Cl	Cl
4863	F	F	OCH <sub>3</sub>	Cl	Br
4864	F	F	OCH <sub>3</sub>	Cl	F
4865	F	F	OCH <sub>3</sub>	Br	H
4866	F	F	OCH <sub>3</sub>	Br	CH <sub>3</sub>
4867	F	F	OCH <sub>3</sub>	Br	Cl
4868	F	F	OCH <sub>3</sub>	Br	Br
4869	F	F	OCH <sub>3</sub>	Br	F
4870	F	F	OCH <sub>3</sub>	F	H
4871	F	F	OCH <sub>3</sub>	F	CH <sub>3</sub>
4872	F	F	OCH <sub>3</sub>	F	Cl
4873	F	F	OCH <sub>3</sub>	F	Br
4874	F	F	OCH <sub>3</sub>	F	F
4875	F	F	Cl	H	H
4876	F	F	Cl	H	CH <sub>3</sub>
4877	F	F	Cl	H	OCH <sub>3</sub>
4878	F	F	Cl	H	Cl
4879	F	F	Cl	H	Br
4880	F	F	Cl	H	F
4881	F	F	Cl	CH <sub>3</sub>	H
4882	F	F	Cl	CH <sub>3</sub>	CH <sub>3</sub>
4883	F	F	Cl	CH <sub>3</sub>	OCH <sub>3</sub>
4884	F	F	Cl	CH <sub>3</sub>	Br
4885	F	F	Cl	CH <sub>3</sub>	F
4886	F	F	Cl	OCH <sub>3</sub>	H
4887	F	F	Cl	OCH <sub>3</sub>	CH <sub>3</sub>

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4888	F	F	Cl	OCH <sub>3</sub>	OCH <sub>3</sub>
4889	F	F	Cl	OCH <sub>3</sub>	Br
4890	F	F	Cl	OCH <sub>3</sub>	F
4891	F	F	Cl	Cl	H
4892	F	F	Cl	Cl	CH <sub>3</sub>
4893	F	F	Cl	Cl	OCH <sub>3</sub>
4894	F	F	Cl	Cl	Cl
4895	F	F	Cl	Cl	Br
4896	F	F	Cl	Cl	F
4897	F	F	Cl	Br	H
4898	F	F	Cl	Br	CH <sub>3</sub>
4899	F	F	Cl	Br	OCH <sub>3</sub>
4900	F	F	Cl	Br	Br
4901	F	F	Cl	F	H
4902	F	F	Cl	F	CH <sub>3</sub>
4903	F	F	Cl	F	OCH <sub>3</sub>
4904	F	F	Cl	F	Br
4905	F	F	Cl	F	F
4906	F	F	Br	H	H
4907	F	F	Br	H	CH <sub>3</sub>
4908	F	F	Br	H	OCH <sub>3</sub>
4909	F	F	Br	H	Cl
4910	F	F	Br	H	Br
4911	F	F	Br	H	F
4912	F	F	Br	CH <sub>3</sub>	H
4913	F	F	Br	CH <sub>3</sub>	CH <sub>3</sub>
4914	F	F	Br	CH <sub>3</sub>	OCH <sub>3</sub>
4915	F	F	Br	CH <sub>3</sub>	Cl
4916	F	F	Br	CH <sub>3</sub>	F
4917	F	F	Br	OCH <sub>3</sub>	H
4918	F	F	Br	OCH <sub>3</sub>	CH <sub>3</sub>
4919	F	F	Br	OCH <sub>3</sub>	OCH <sub>3</sub>
4920	F	F	Br	OCH <sub>3</sub>	Cl
4921	F	F	Br	OCH <sub>3</sub>	F
4922	F	F	Br	Cl	H
4923	F	F	Br	Cl	CH <sub>3</sub>
4924	F	F	Br	Cl	OCH <sub>3</sub>
4925	F	F	Br	Cl	Cl
4926	F	F	Br	Cl	F
4927	F	F	Br	Br	H

Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4928	F	F	Br	Br	CH <sub>3</sub>
4929	F	F	Br	Br	OCH <sub>3</sub>
4930	F	F	Br	Br	Cl
4931	F	F	Br	Br	Br
4932	F	F	Br	Br	F
4933	F	F	Br	F	H
4934	F	F	Br	F	CH <sub>3</sub>
4935	F	F	Br	F	OCH <sub>3</sub>
4936	F	F	Br	F	Cl
4937	F	F	Br	F	F
4938	F	F	F	H	H
4939	F	F	F	H	CH <sub>3</sub>
4940	F	F	F	H	OCH <sub>3</sub>
4941	F	F	F	H	Cl
4942	F	F	F	H	Br
4943	F	F	F	H	F
4944	F	F	F	CH <sub>3</sub>	H
4945	F	F	F	CH <sub>3</sub>	CH <sub>3</sub>
4946	F	F	F	CH <sub>3</sub>	OCH <sub>3</sub>
4947	F	F	F	CH <sub>3</sub>	Cl
4948	F	F	F	CH <sub>3</sub>	Br
4949	F	F	F	OCH <sub>3</sub>	H
4950	F	F	F	OCH <sub>3</sub>	CH <sub>3</sub>
4951	F	F	F	OCH <sub>3</sub>	OCH <sub>3</sub>
4952	F	F	F	OCH <sub>3</sub>	Cl
4953	F	F	F	OCH <sub>3</sub>	Br
4954	F	F	F	Cl	H
4955	F	F	F	Cl	CH <sub>3</sub>
4956	F	F	F	Cl	OCH <sub>3</sub>
4957	F	F	F	Cl	Cl
4958	F	F	F	Cl	Br
4959	F	F	F	Br	H
4960	F	F	F	Br	CH <sub>3</sub>
4961	F	F	F	Br	OCH <sub>3</sub>
4962	F	F	F	Br	Cl
4963	F	F	F	Br	Br
4964	F	F	F	F	H
4965	F	F	F	F	CH <sub>3</sub>
4966	F	F	F	F	OCH <sub>3</sub>
4967	F	F	F	F	Cl

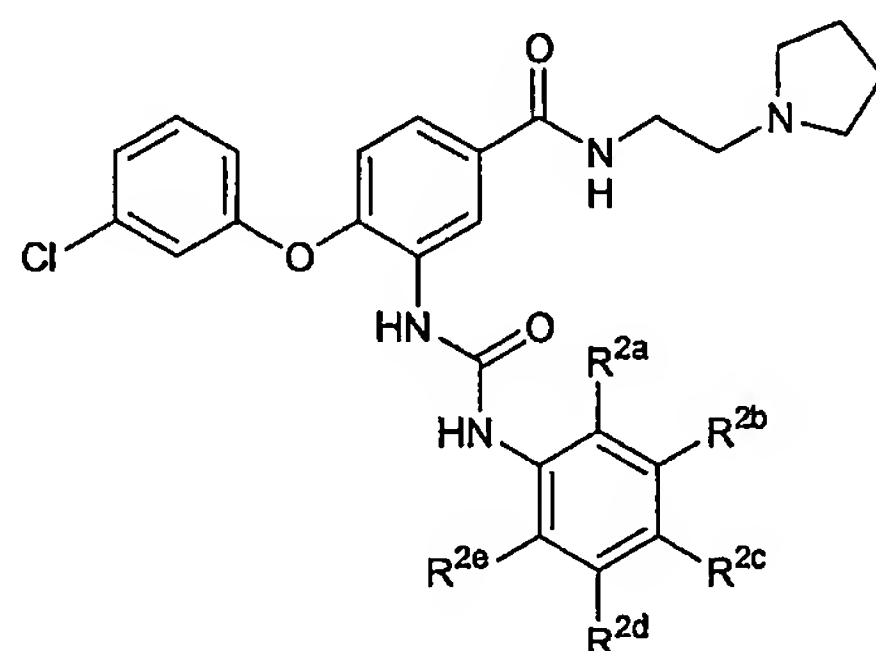
Compound No.	R <sup>2a</sup>	R <sup>2b</sup>	R <sup>2c</sup>	R <sup>2d</sup>	R <sup>2e</sup>
4968	F	F	F	F	Br
4969	F	F	F	F	F

[0437] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



[0438] wherein R<sup>2a</sup>, R<sup>2b</sup>, R<sup>2c</sup>, R<sup>2d</sup>, and R<sup>2e</sup> are as defined in Table 2.

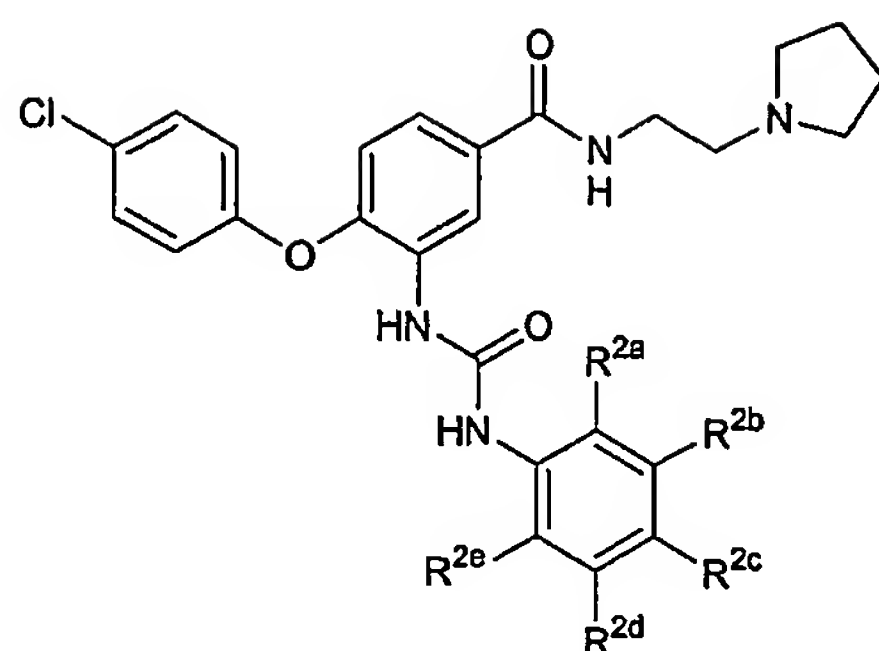
[0439] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



[0440] wherein R<sup>2a</sup>, R<sup>2b</sup>, R<sup>2c</sup>, R<sup>2d</sup>, and R<sup>2e</sup> are as defined in Table 2.

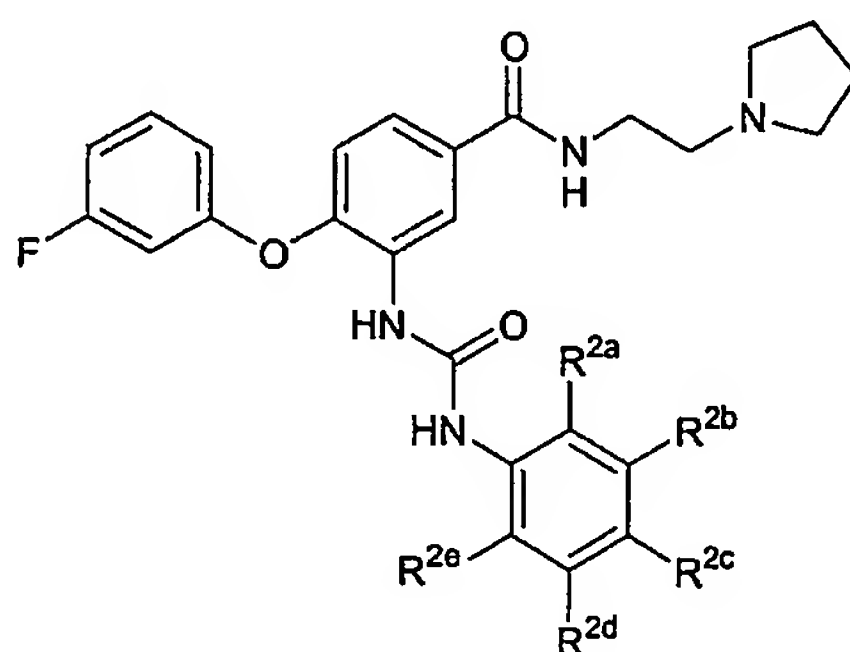
[0441] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:





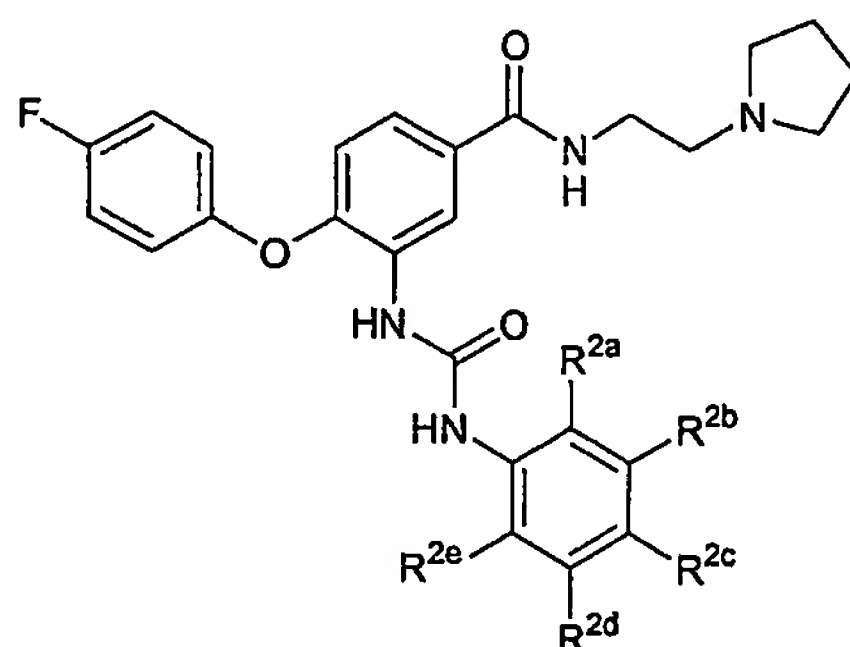
[0442] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0443] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



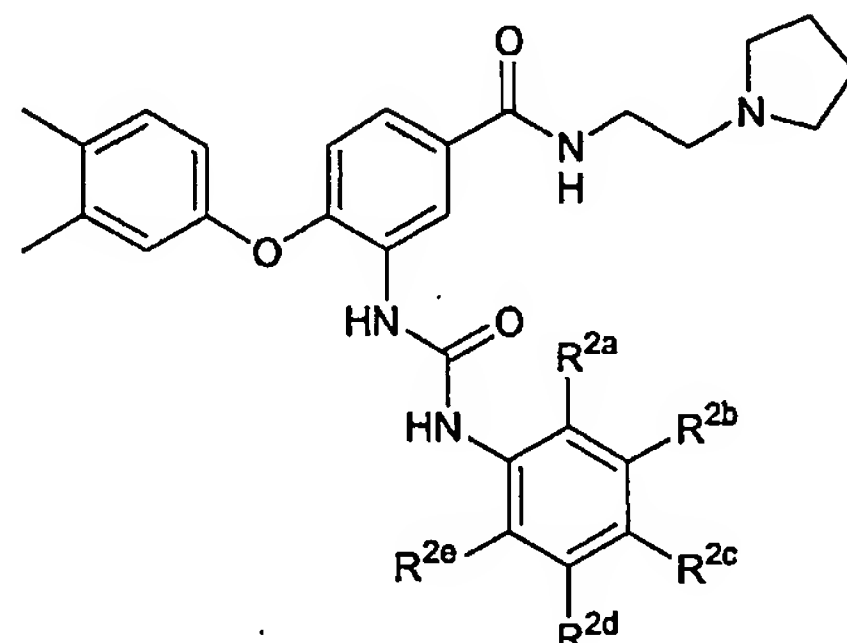
[0444] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0445] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



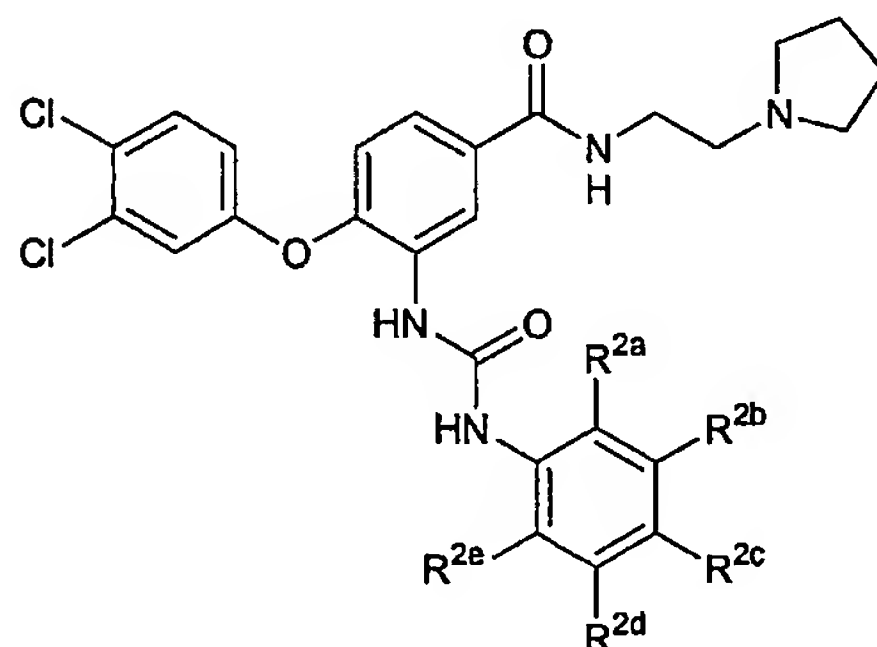
[0446] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0447] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



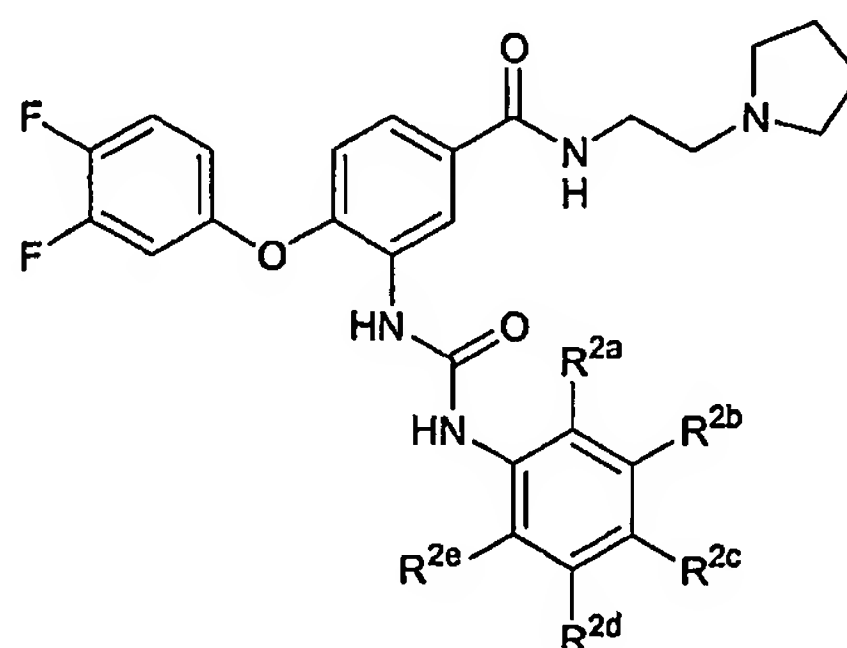
[0448] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0449] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



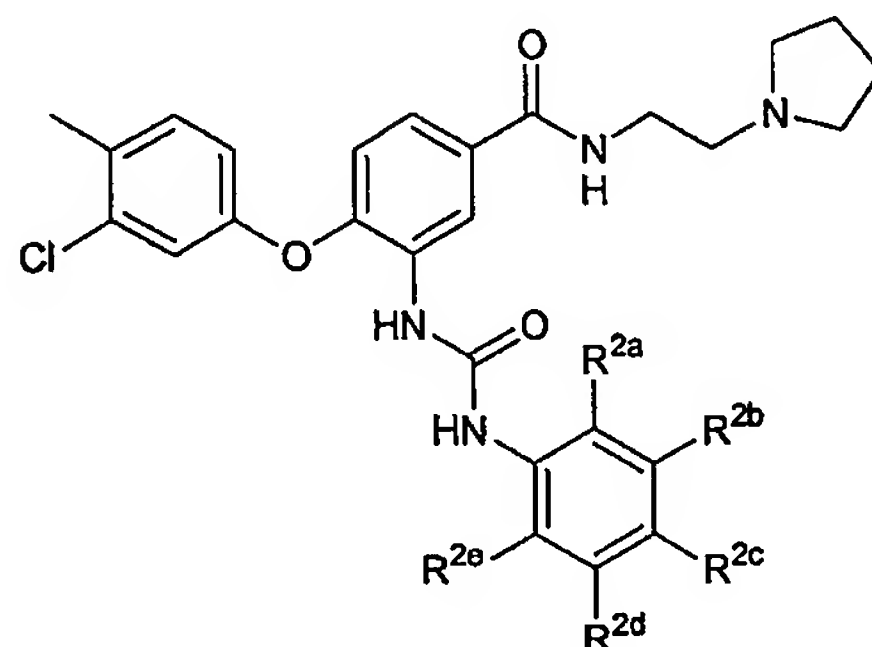
[0450] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0451] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



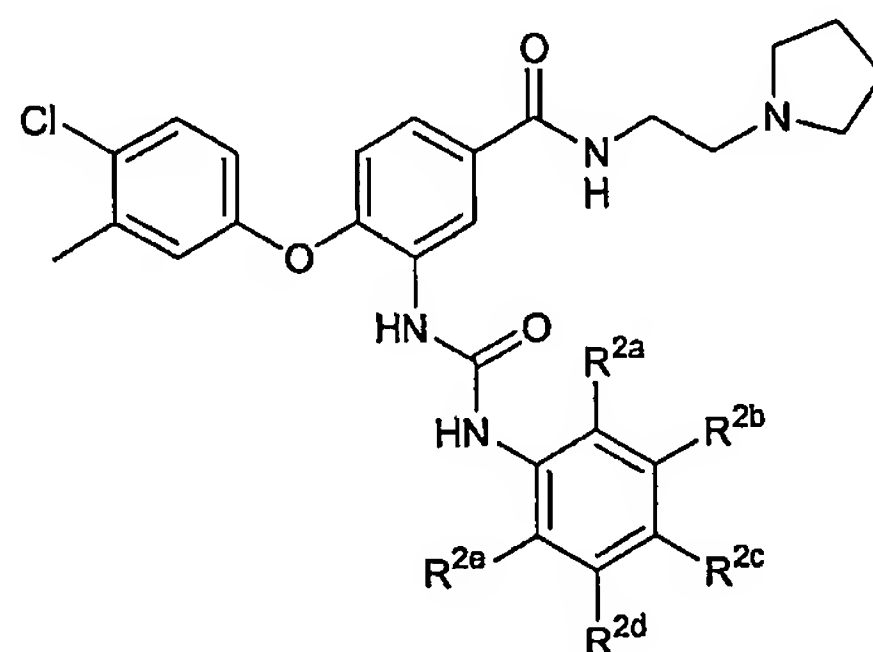
[0452] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0453] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



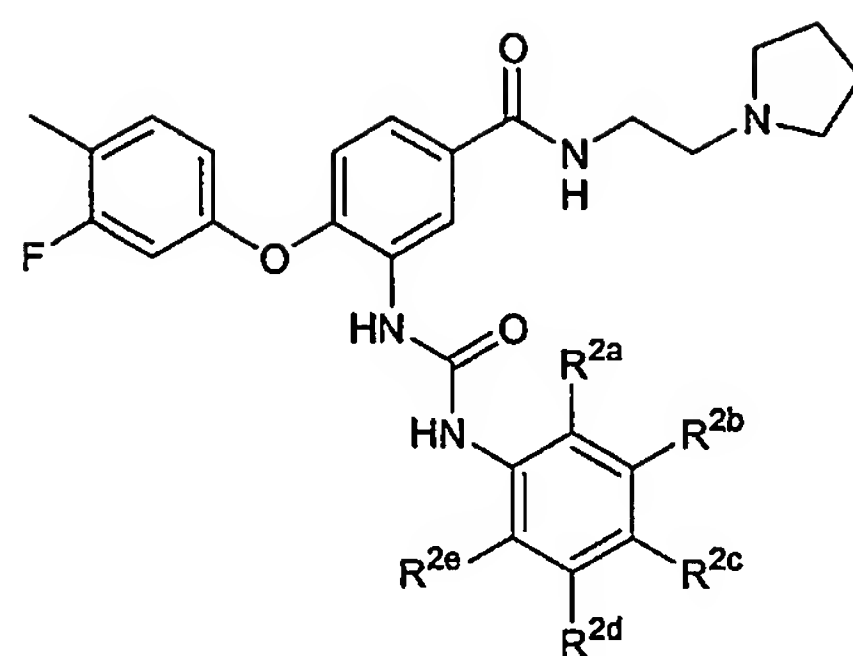
[0454] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0455] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



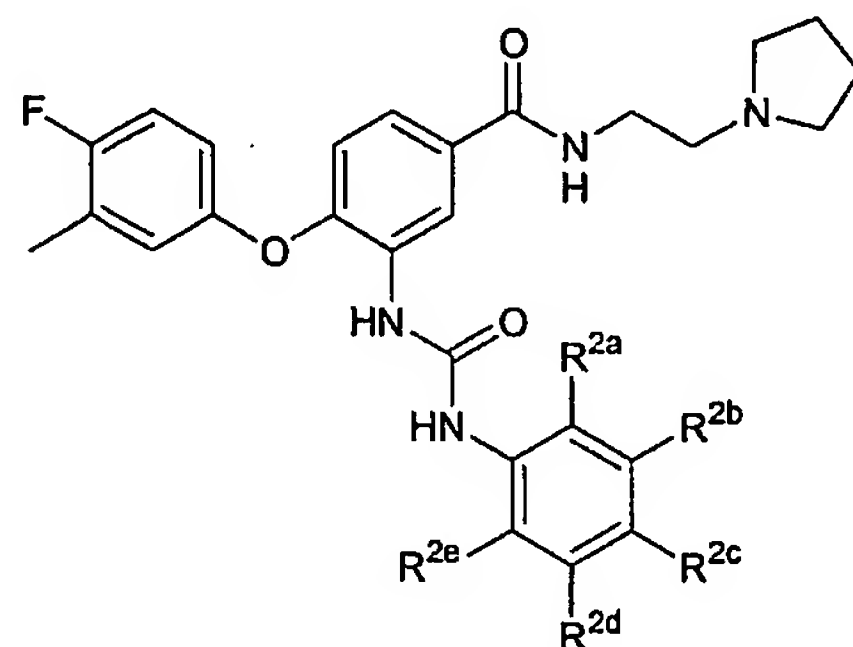
[0456] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0457] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



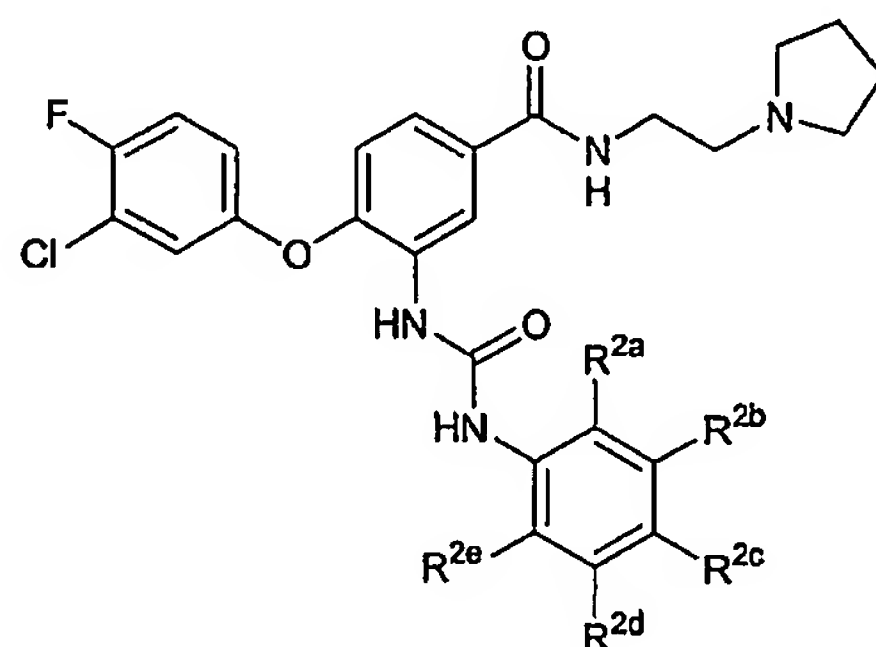
[0458] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0459] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



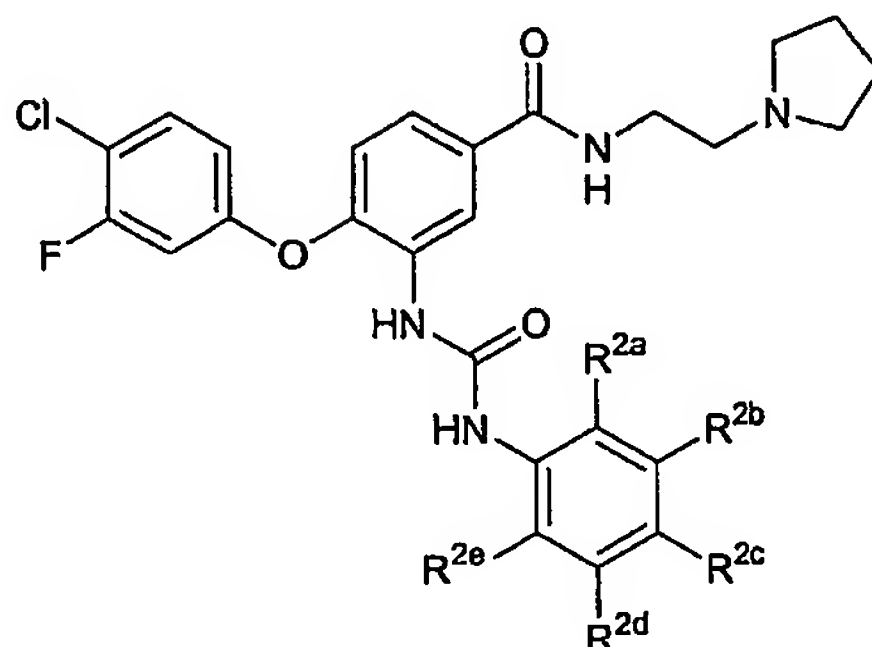
[0460] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0461] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



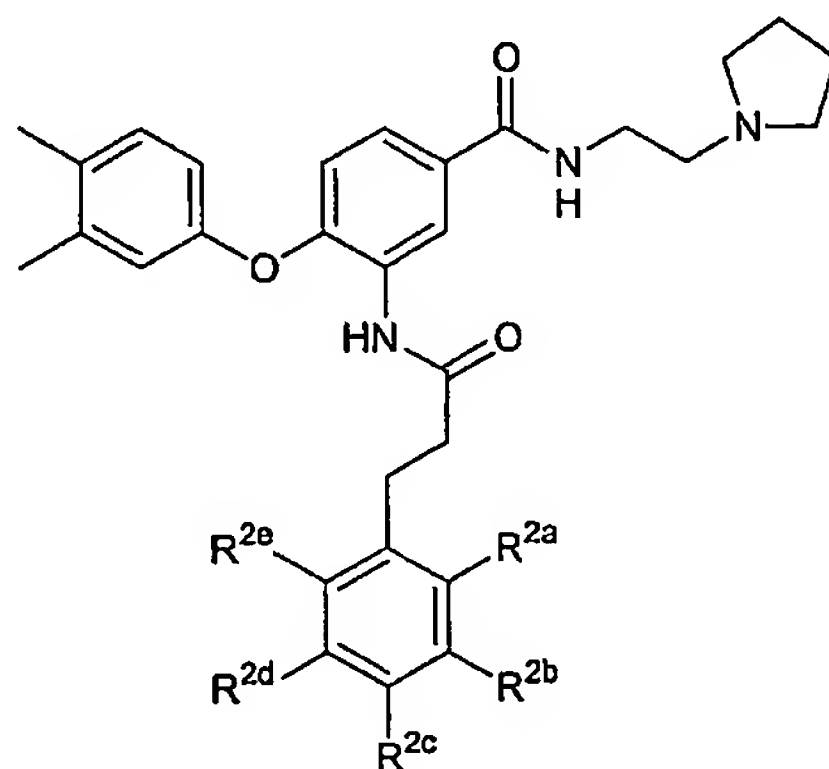
[0462] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0463] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



[0464] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0465] In another embodiment, the compound of Formula I is selected from the group of compounds of Formula V having the structure:



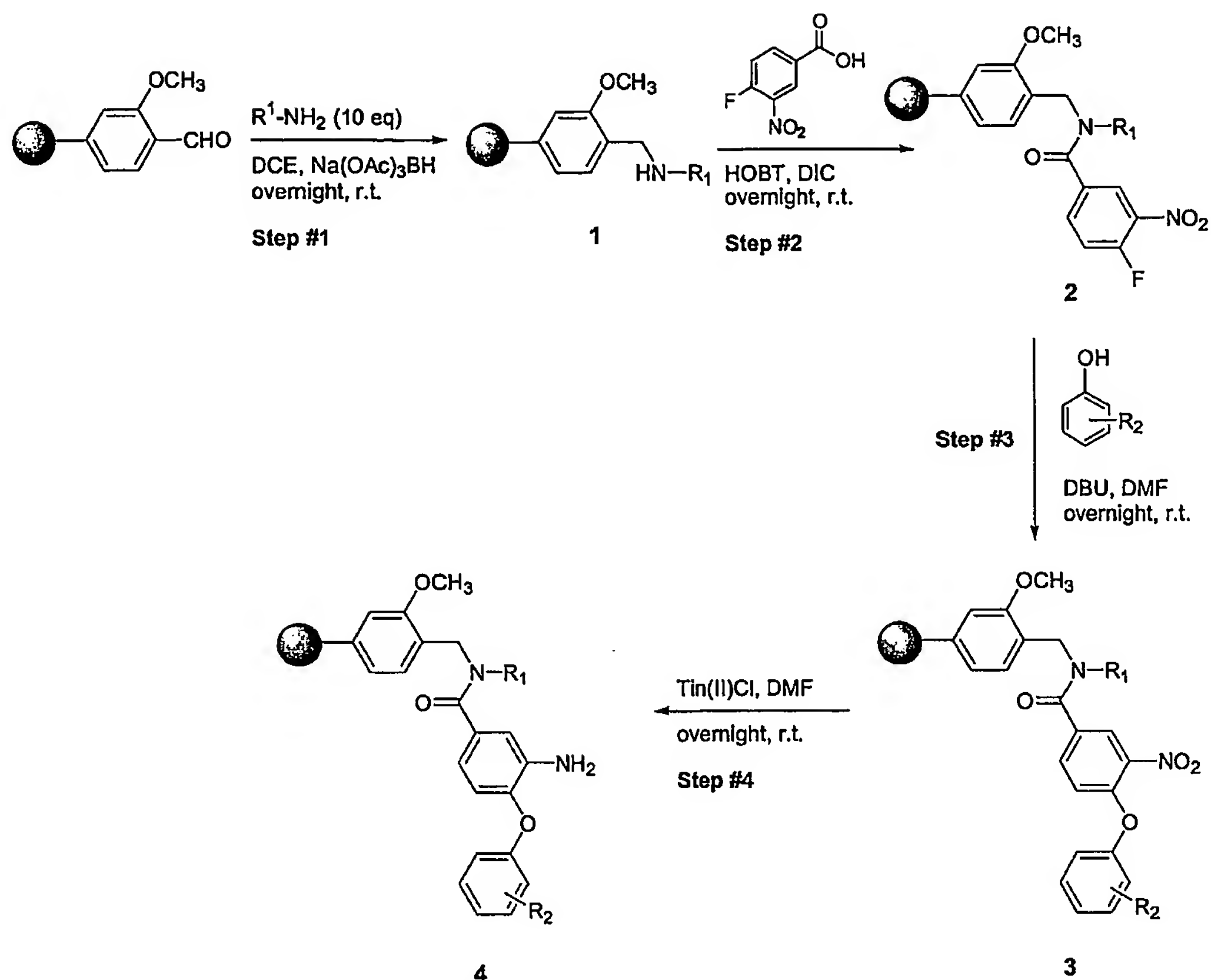
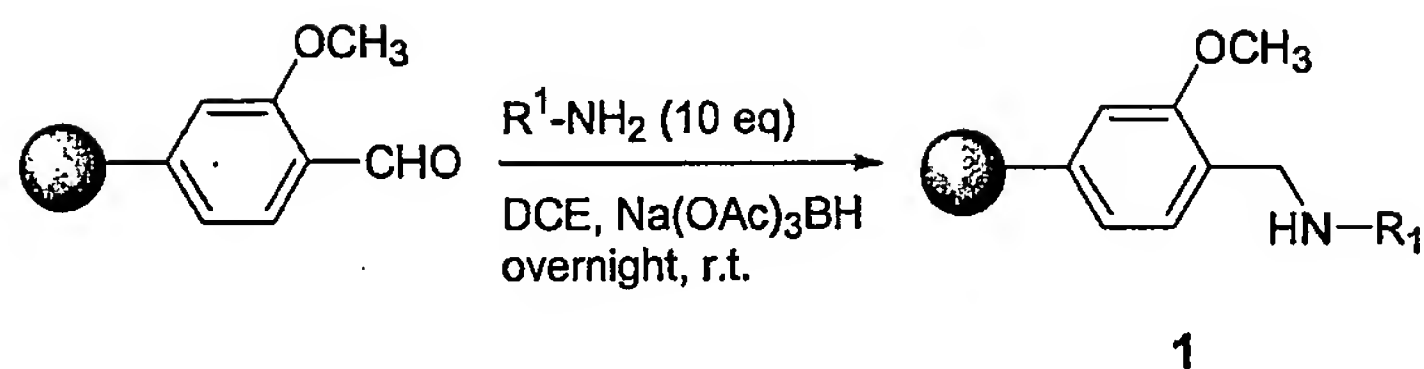
[0466] wherein  $R^{2a}$ ,  $R^{2b}$ ,  $R^{2c}$ ,  $R^{2d}$ , and  $R^{2e}$  are as defined in Table 2.

[0467] The compounds of Formula I are MCH receptor antagonists, as demonstrated by the ligand binding assays described hereinbelow. MCH receptor antagonist activity has been correlated with pharmaceutical activity for the treatment of eating disorders such as obesity and hyperphagia, and diabetes. Compounds of Formula I exhibit good activity in standard *in vitro* MCH calcium mobilization assays and/or receptor binding assays, specifically in the assays described hereinbelow, see Examples 23 and 24. Generally, compounds of Formula I have an  $K_i$

of about 10  $\mu\text{M}$  or less, preferably about 1  $\mu\text{M}$  or less, more preferably about 100 nM or less, or even more preferably about 10 nM or less, as determined by a standard *in vitro* MCH receptor mediated calcium mobilization assay as exemplified by Example 23, hereinbelow. Generally compounds of Formula I are MCH receptor antagonists and exhibit  $\text{IC}_{50}$  values of about 10  $\mu\text{M}$  or less, preferably about 1  $\mu\text{M}$  or less, more preferably about 100 nM or less, or even more preferably about 10 nM or less, as determined by a standard *in vitro* MCH receptor binding assay such as is described hereinbelow in Example 24.

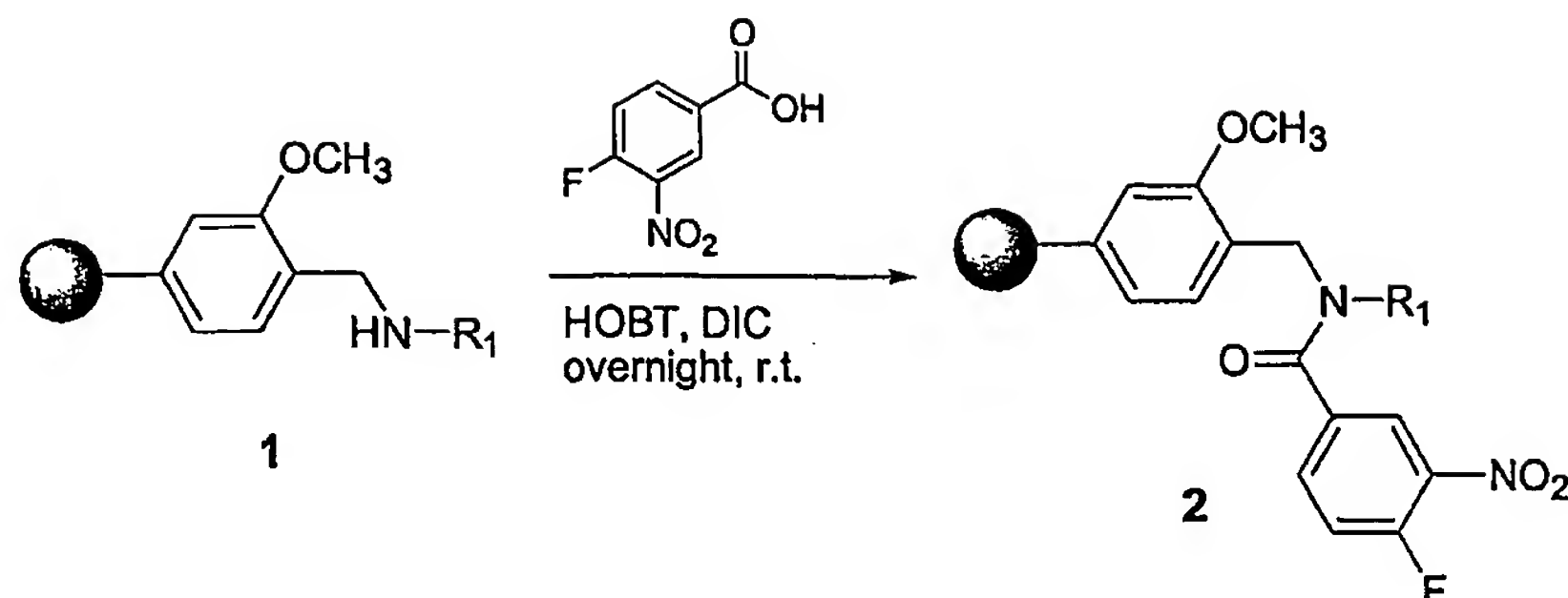
[0468] Preferably, the MCH receptor antagonists of Formula I bind specifically, and still more preferably with high affinity, to MCH receptors.

[0469] The following examples illustrate the invention.

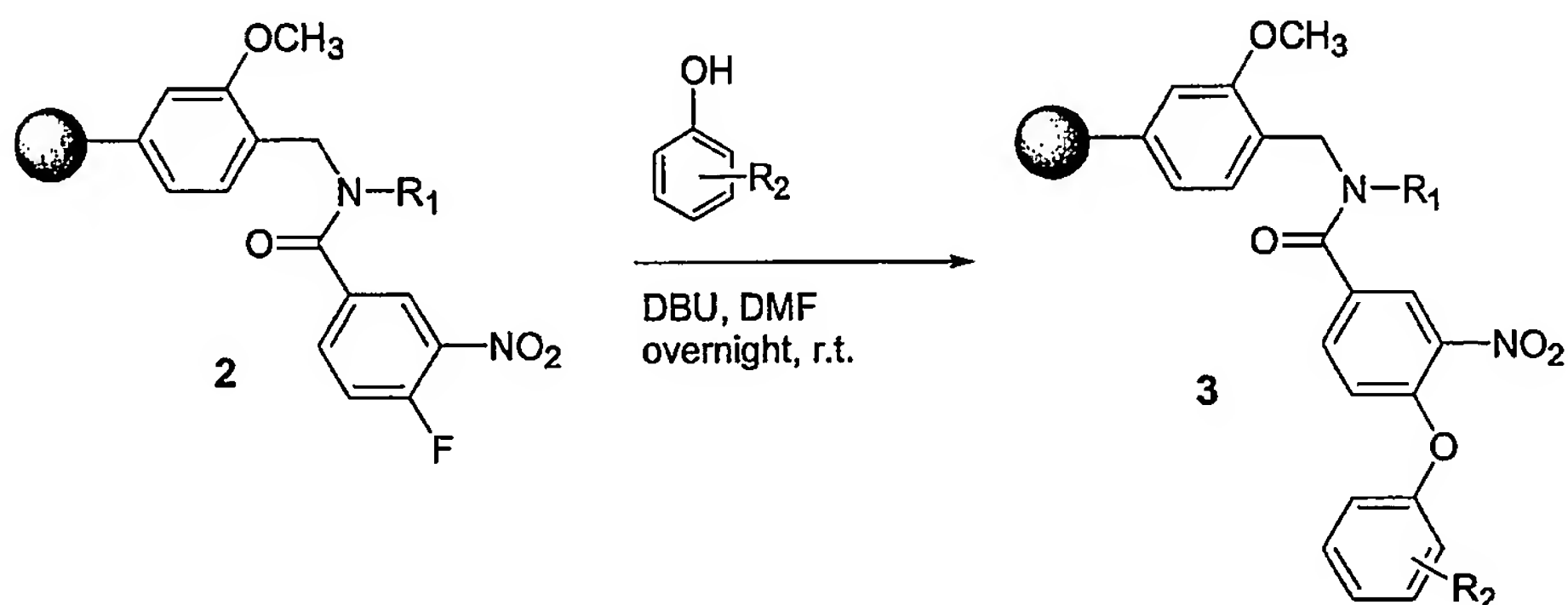
Example 1Step 1

[0470] To a 2 L glass bottle was added 4-formyl-3-methoxyphenoxy-polystyrene resin (100-180 mesh, 1.1 mmol/g loading, 20 g, 22 mmol), amine (5 eq, 110 mmol), and anhydrous DCE (500 mL). The resulting mixture was shaken for one hour at room temperature. Then,  $Na(OAc)_3BH$  (5 eq, 110 mmol) was added and the mixture was shaken overnight at room temperature. The mixture was degassed every half-hour for the first three hours. The resin was filtered and washed with MeOH (2x) and DCM (2x) to afford **1**.

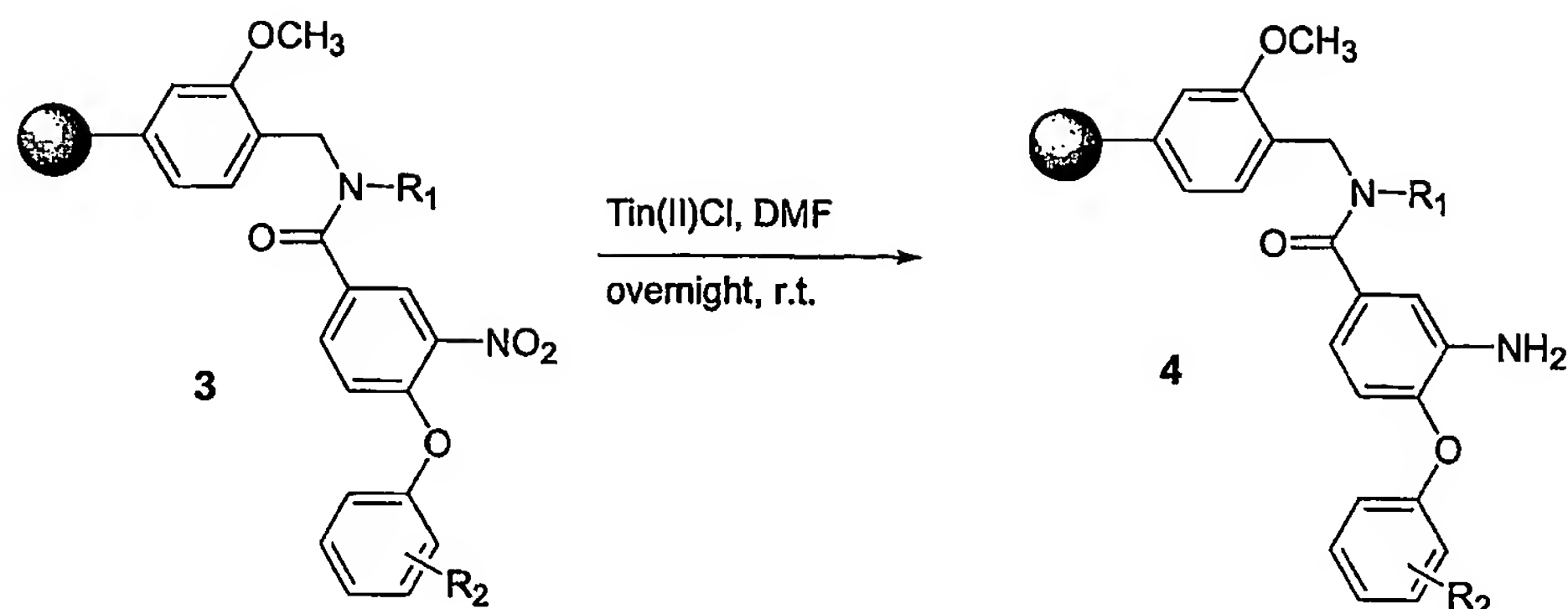


Step 2

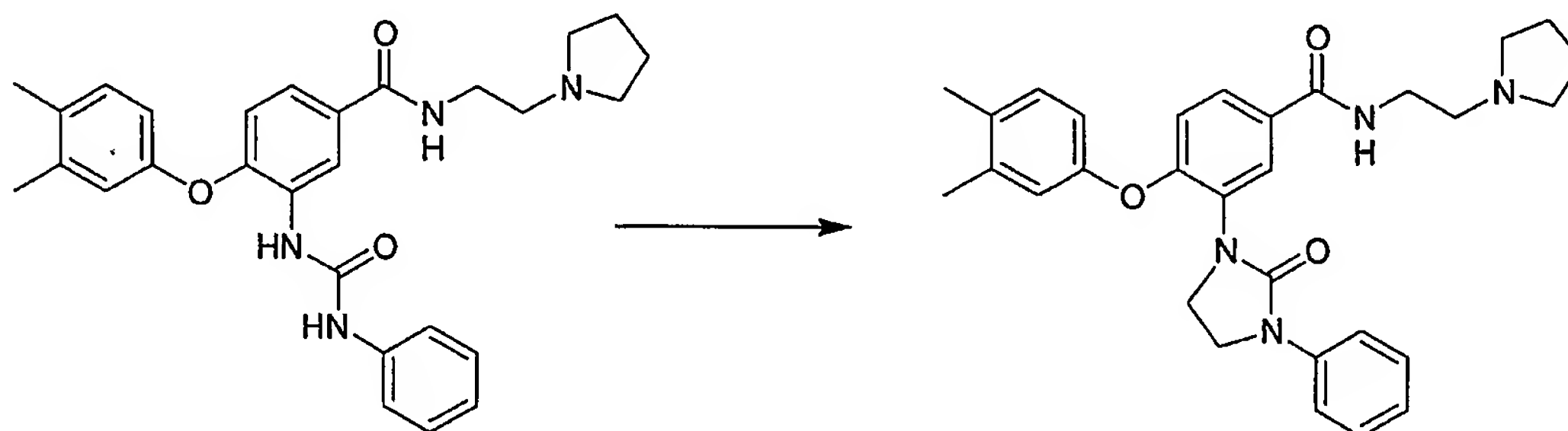
[0471] To a 2 L glass bottle was added **1**, 4-fluoro-3-nitrobenzoic acid (24.4 mmol, 132 mmol), HOBT (18 g, 132 mmol), DIC (42 mL, 264 mmol), and DMF (500 mL). The resulting mixture was shaken overnight at room temperature. The resin was filtered and washed with DMF (2x), MeOH (2x), and DCM (2x) to afford **2**.

Step 3

[0472] To a 2 L glass bottle was added **2**, phenol (27 g, 220 mmol), DBU (20 mL, 132 mmol), and DMF (400 mL). The resulting mixture was shaken overnight at room temperature. Then, the resin was filtered and washed with DMF (2x) and DCM (2x) to afford **3**.

Step 4

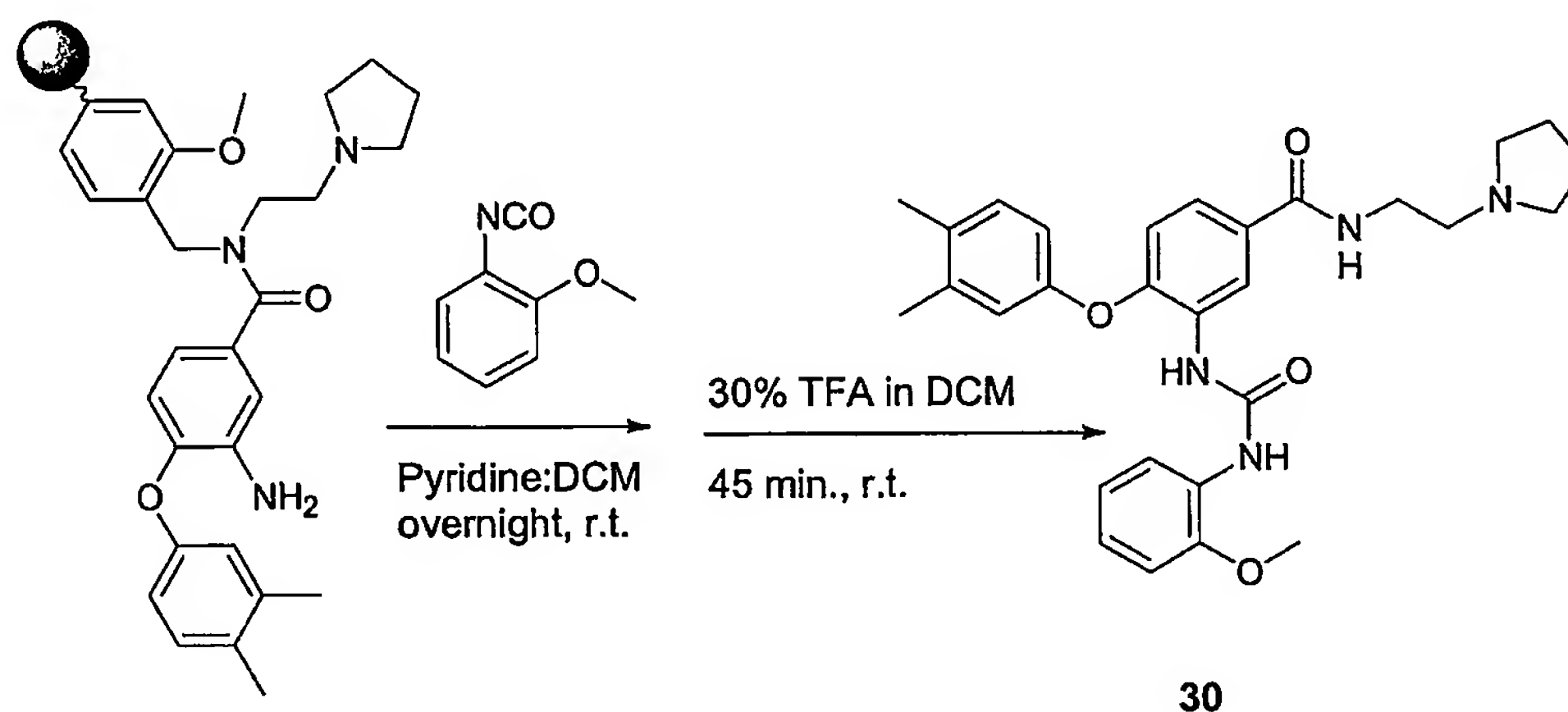
[0473] To a 2 L glass bottle was added 3,  $\text{Sn(II)Cl}_2 \cdot 2\text{H}_2\text{O}$  (49.5 g, 220 mmol) and DMF (400 mL). The resulting mixture was then shaken overnight at room temperature. The resin was filtered and washed with DMF (2x) and DCM (2x) to afford 4.

Example 2Method 1

[0474] Starting material (10 mg, 0.021 mmol) was combined with 1,2-dibromoethane (2.3  $\mu\text{L}$ , 0.025 mmol) and NaH (1 mg, 0.042 mmol) in 0.5 mL DMF at room temperature. The mixture was then heated to 80°C for 1 hour. The reaction mixture was worked up with water and EtOAc.

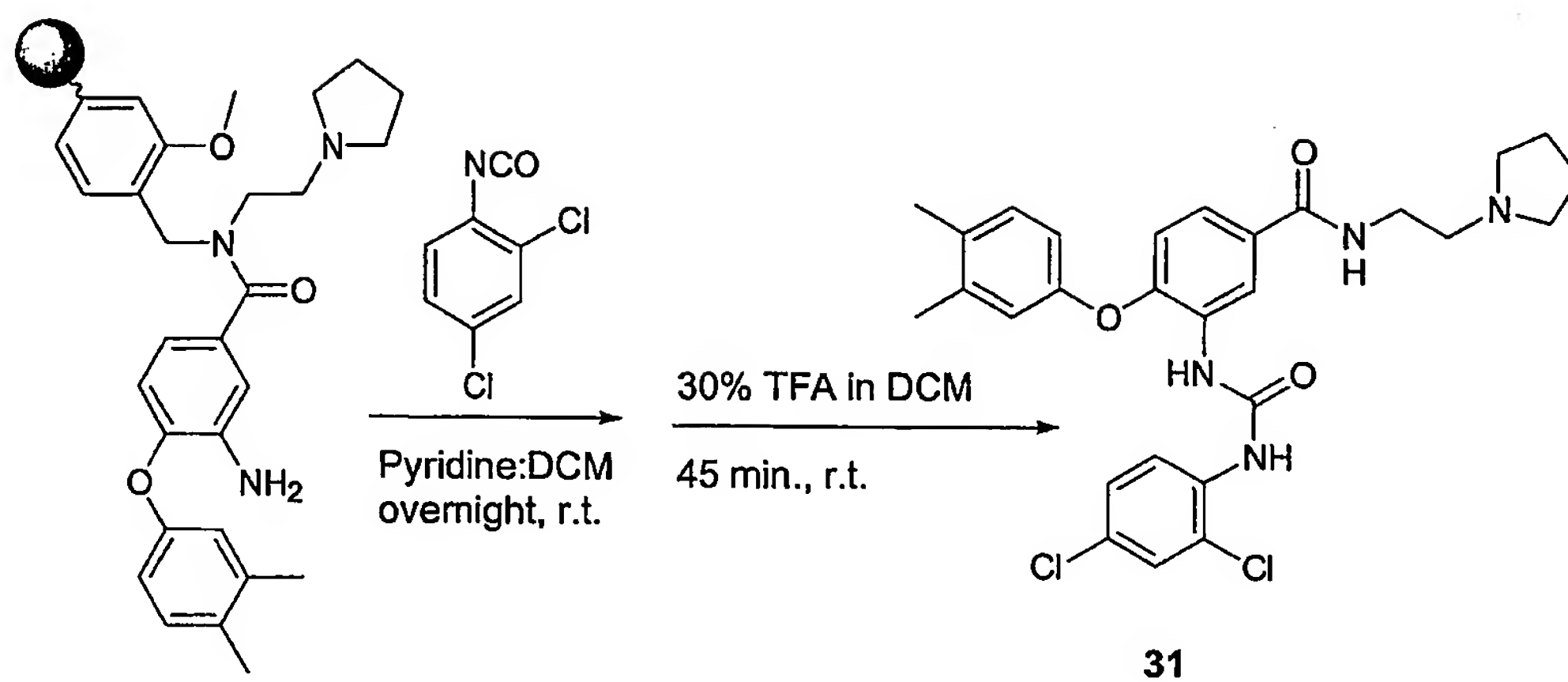
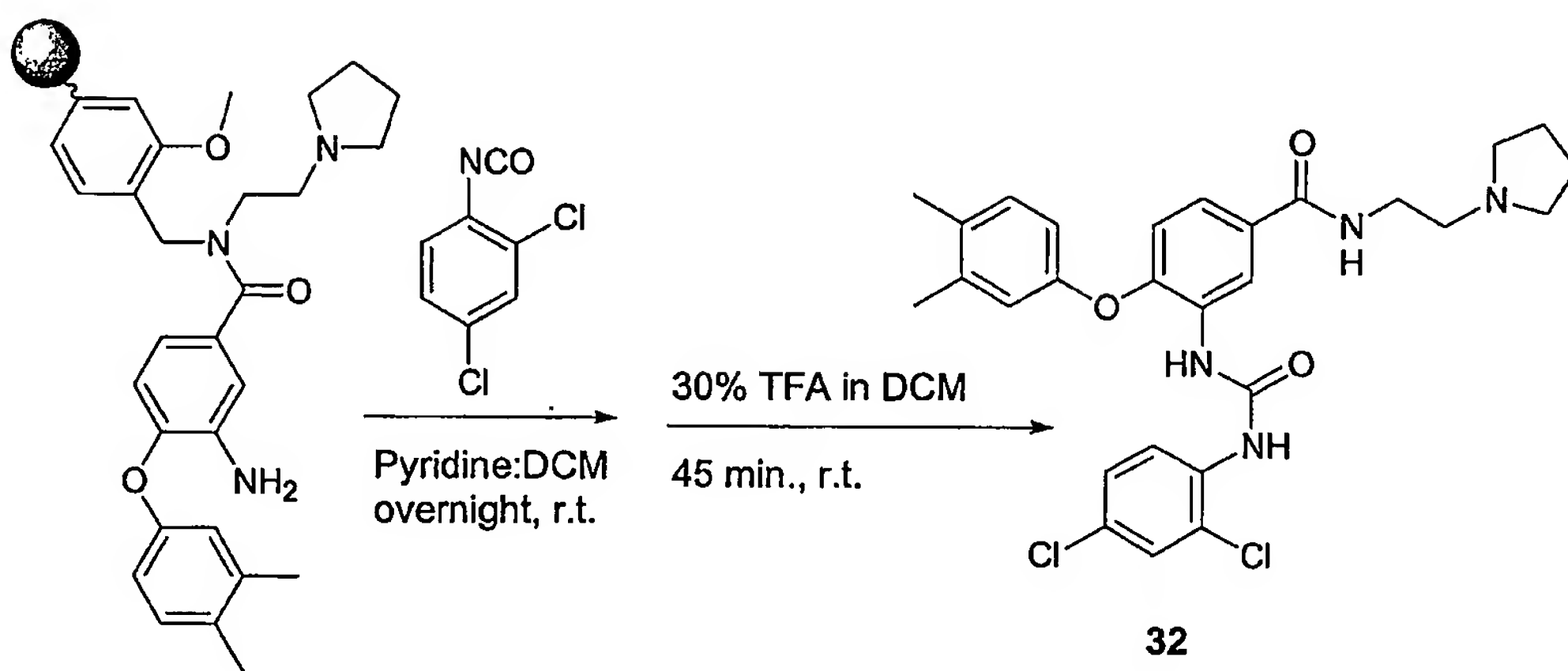
Method 2

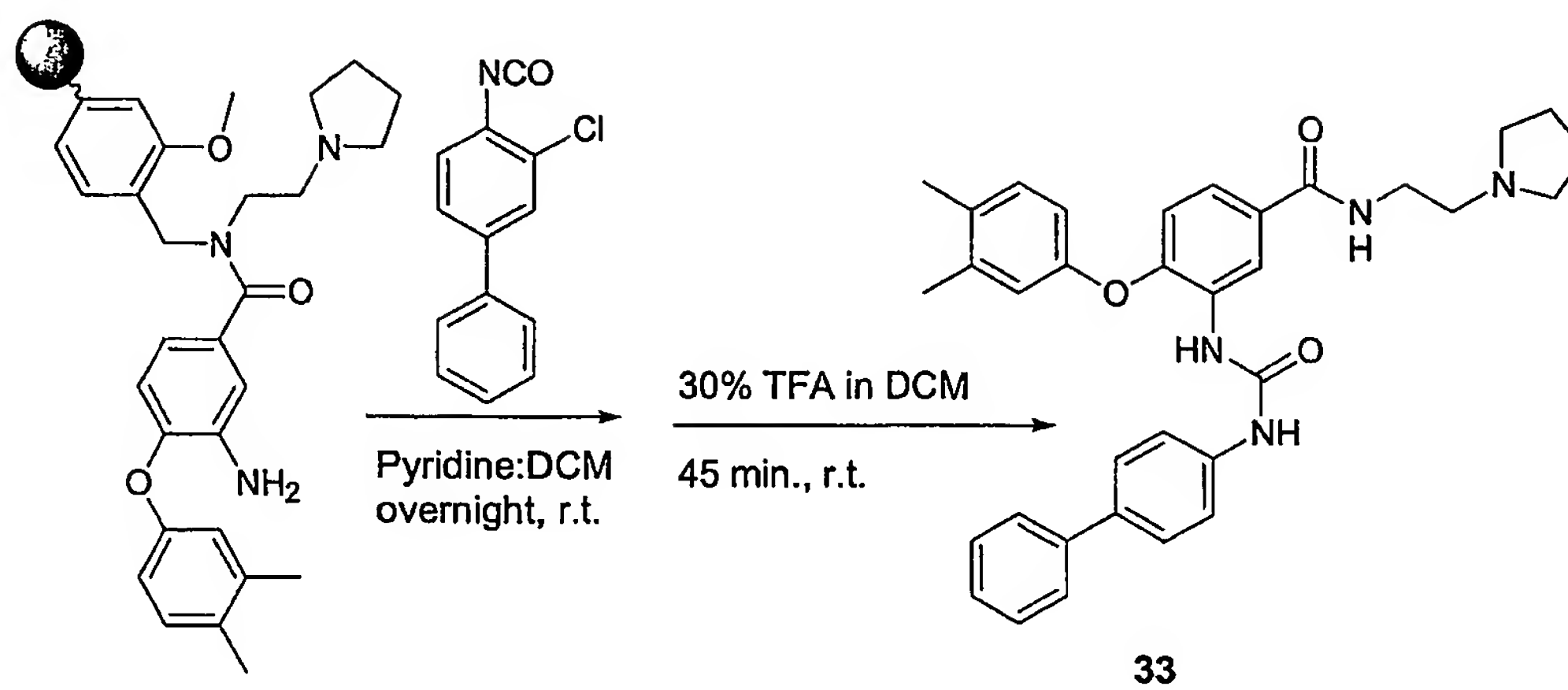
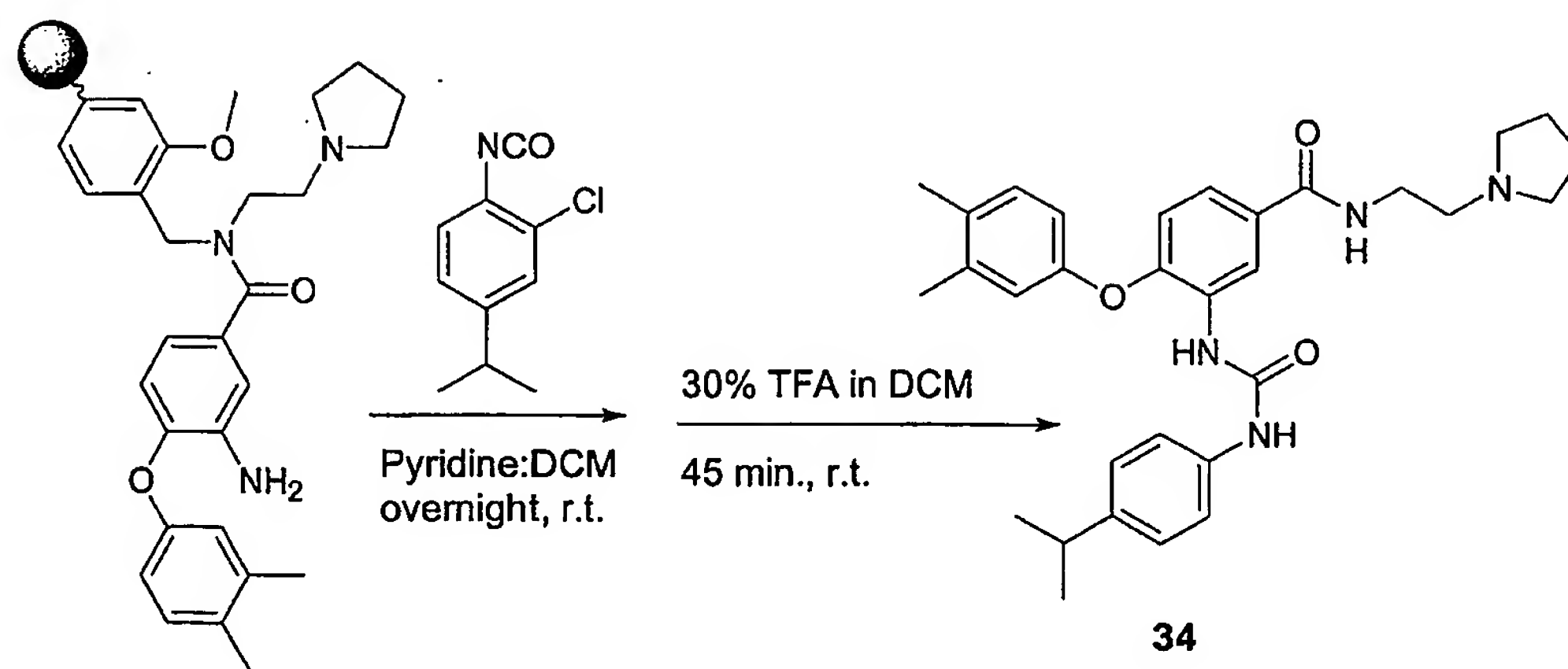
[0475] Starting material (20 mg, 0.04 mmol) was combined with 1,2-diiodoethane (14.3 mg, 0.05 mmol) and NaH (2 mg, 0.08 mmol) in 0.5 mL DMF, then reacted as described above.

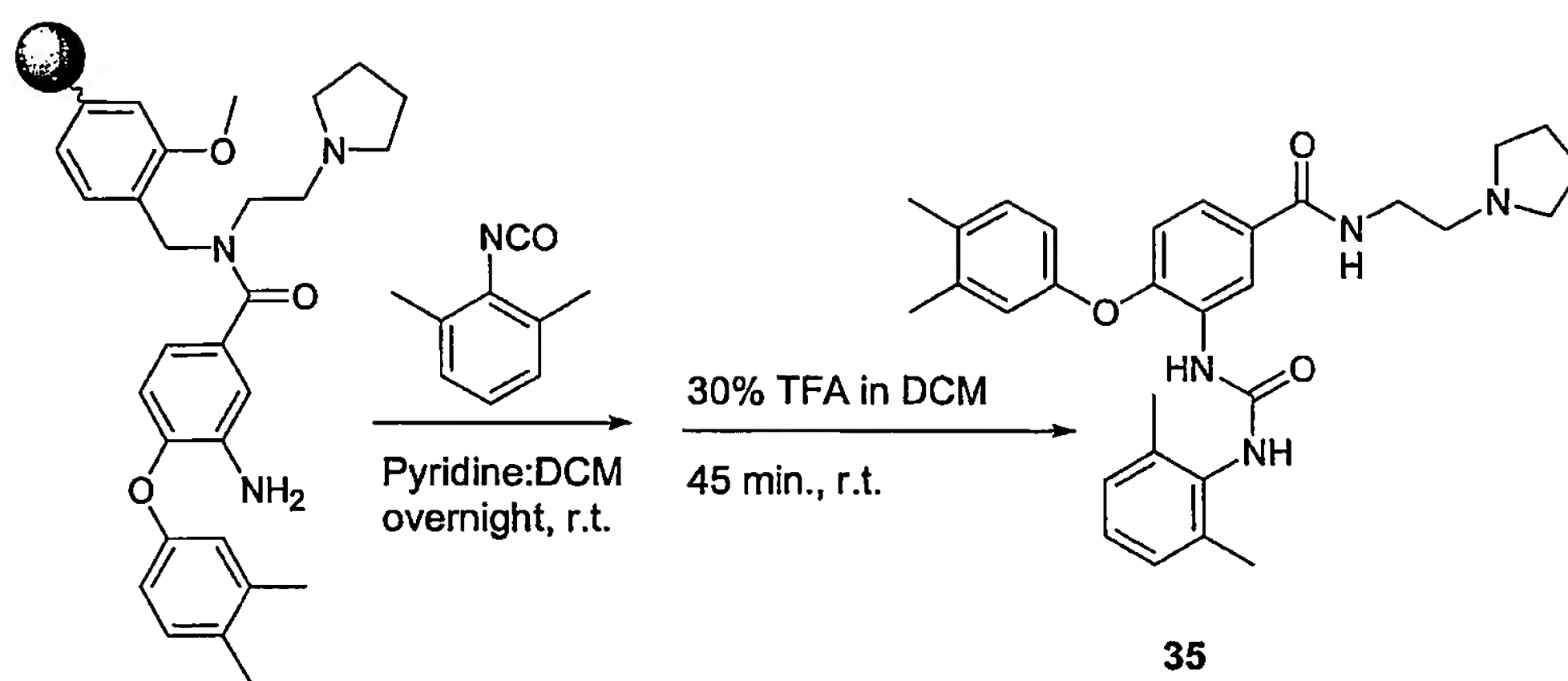
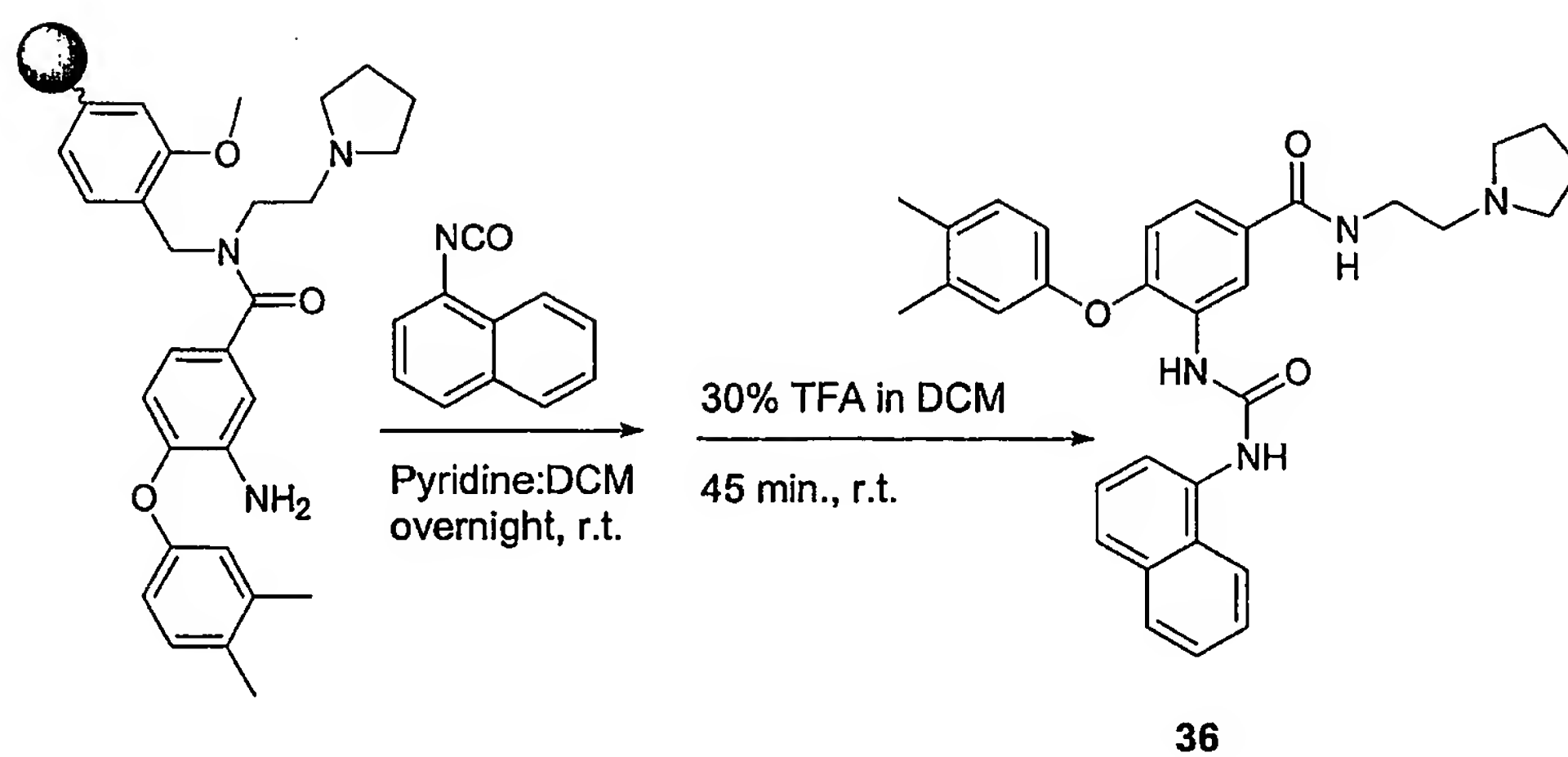
Example 3

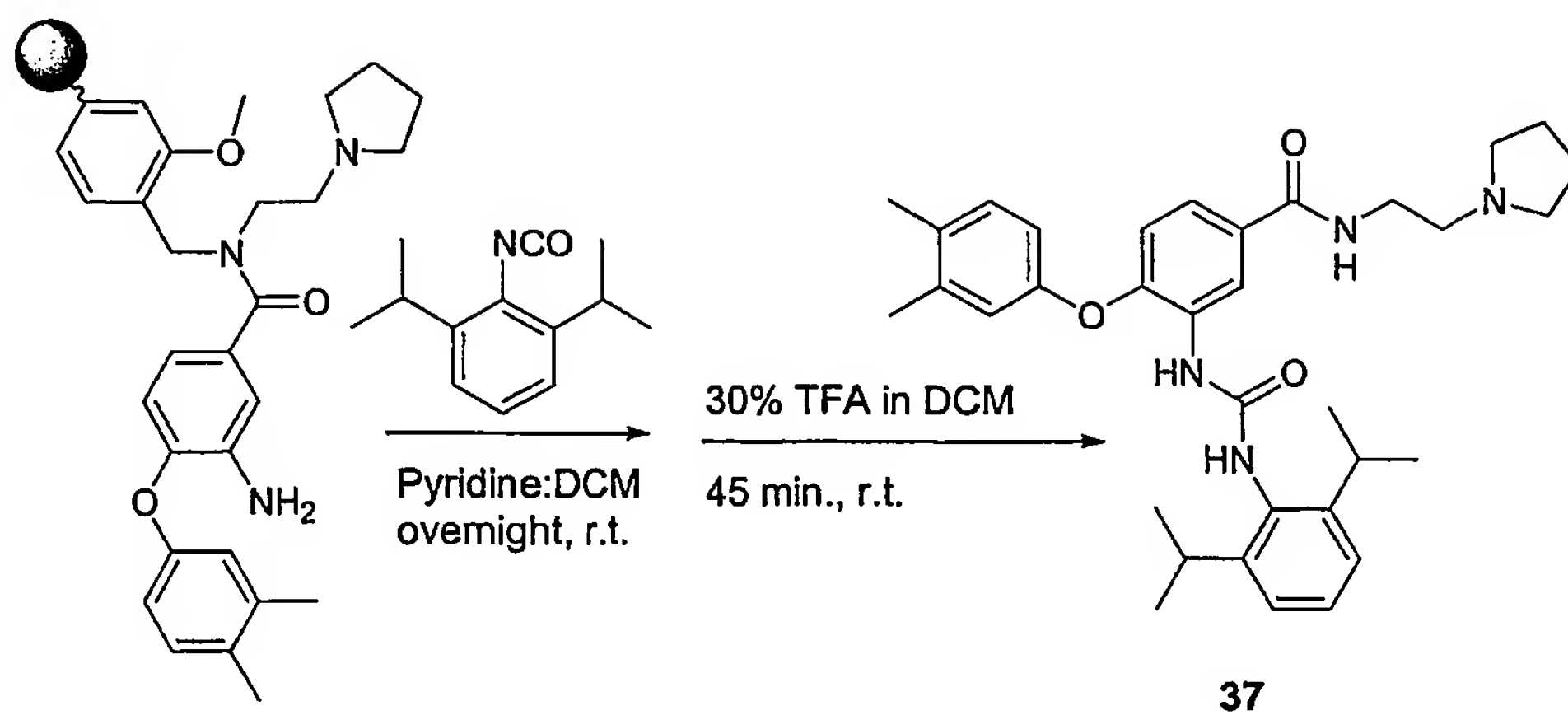
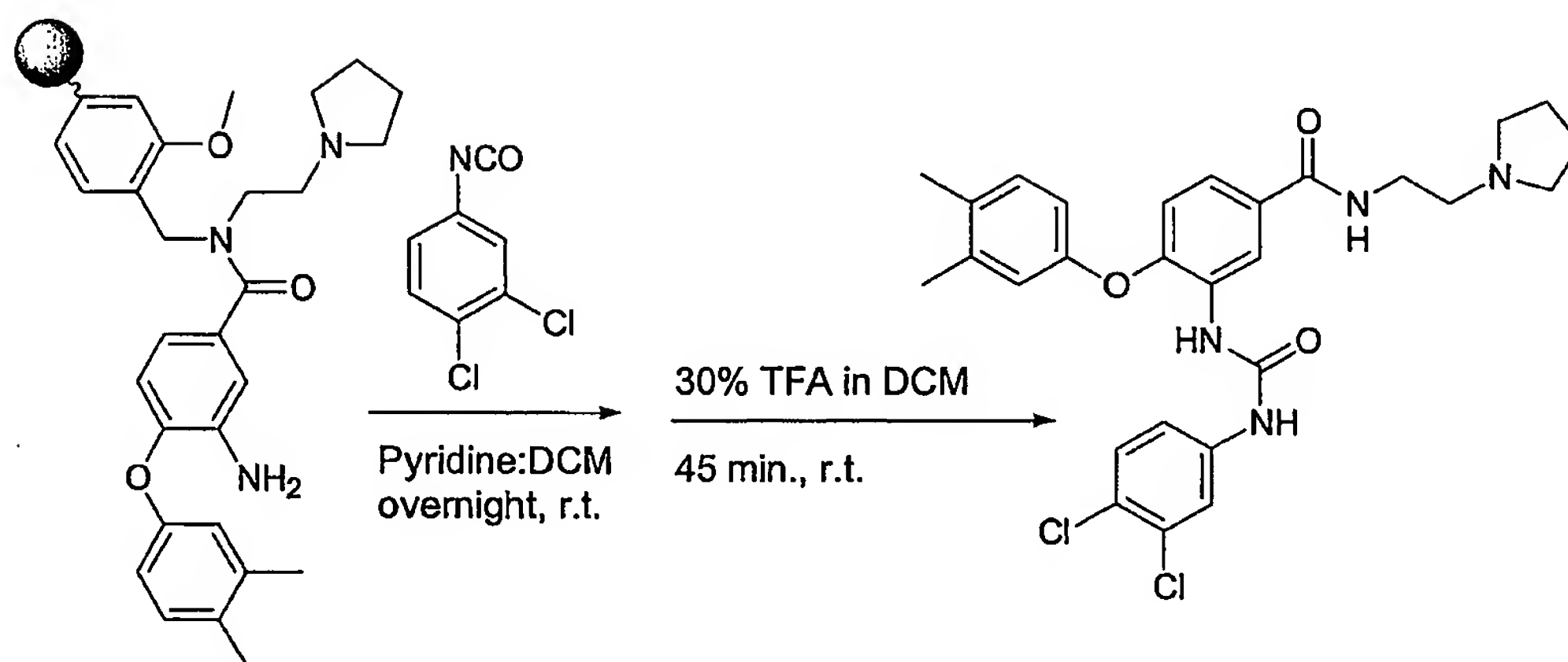
[0476] To a peptide vessel was added resin (1.1 mmol/g loading, 100 mg, 0.11 mmol), 2-methoxyphenylisocyanate (1.1 mmol), and pyridine: DCM (5 mL, 1:1 ratio). The resulting mixture was shaken overnight at room temperature. The resin was washed with DCM (2x). Then, 30% TFA in DCM (10 mL) was added and the resulting mixture was shaken for 45 min. at room temperature. The resin was filtered and washed with DCM (2x). The filtrate was concentrated to afford 30.

[0477] Examples 4-16 were prepared according to the procedure shown in Example 3.

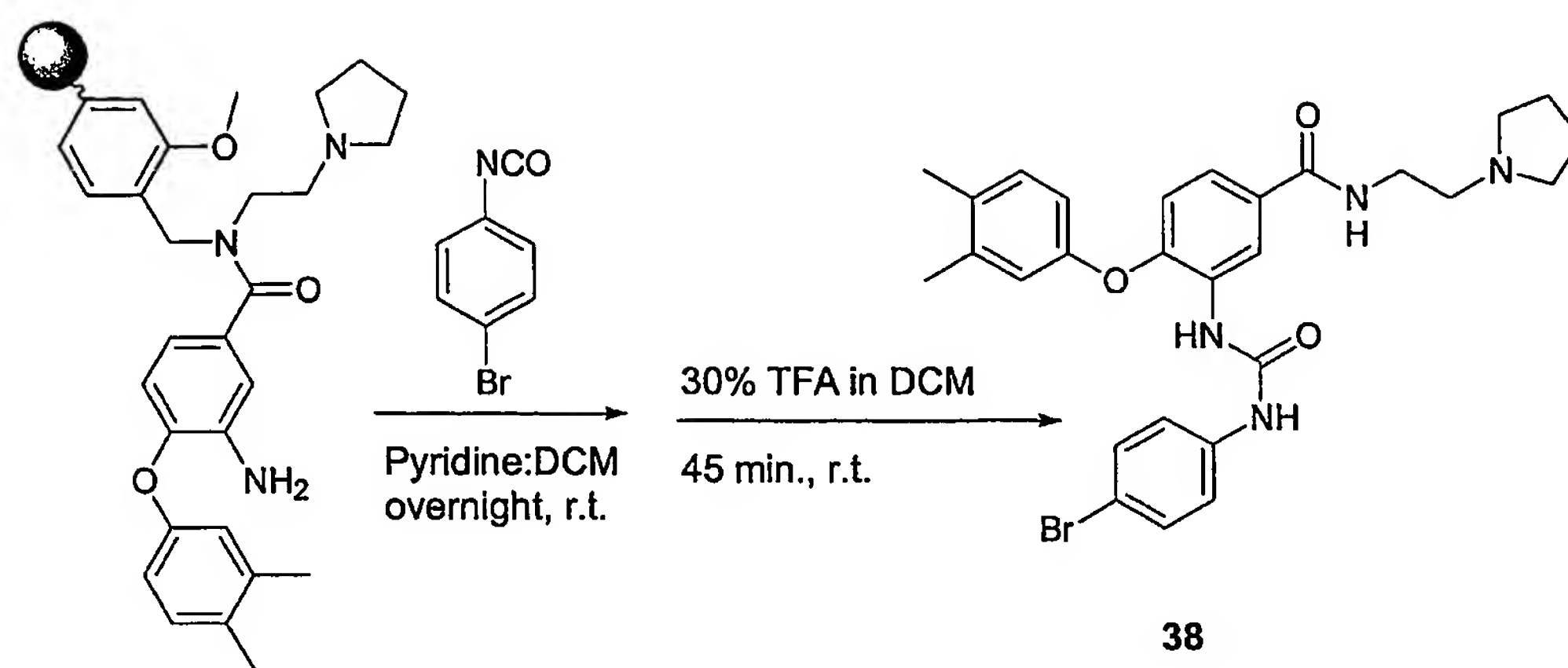
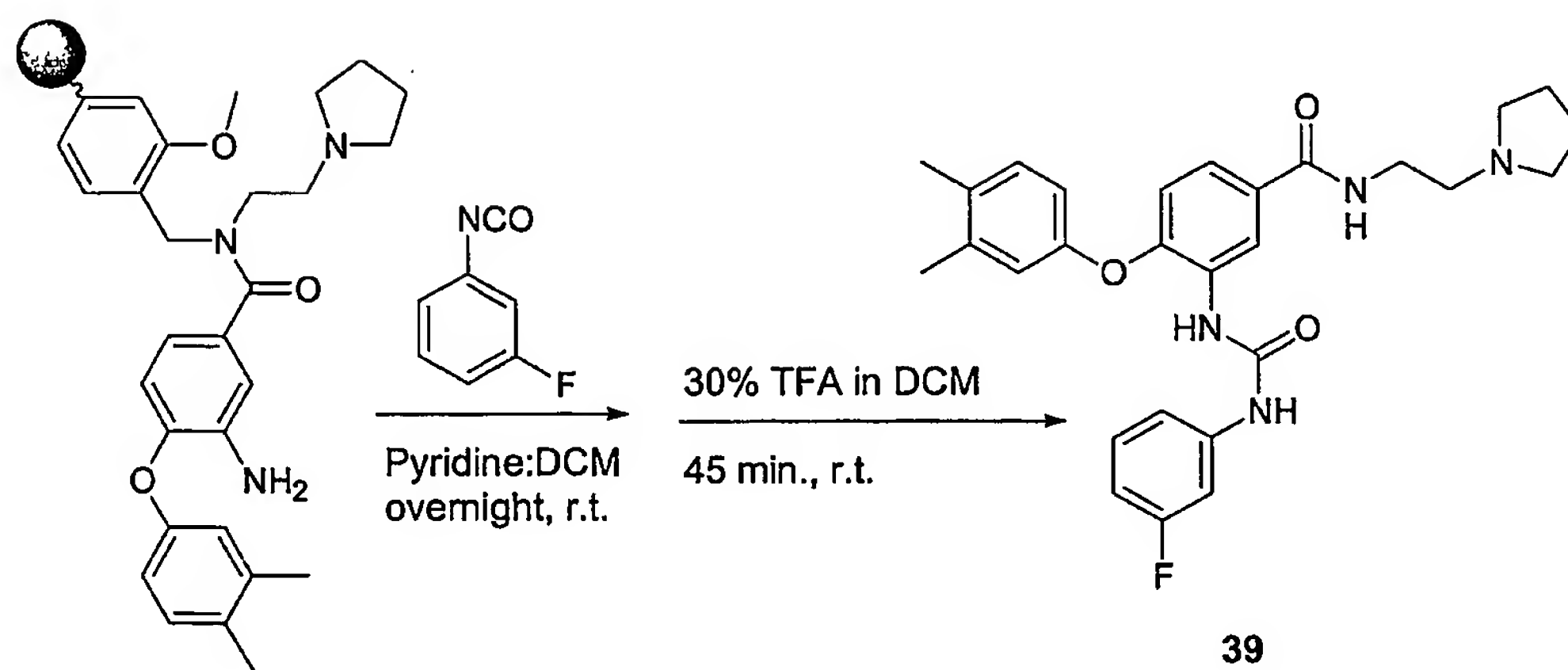
Example 4Example 5

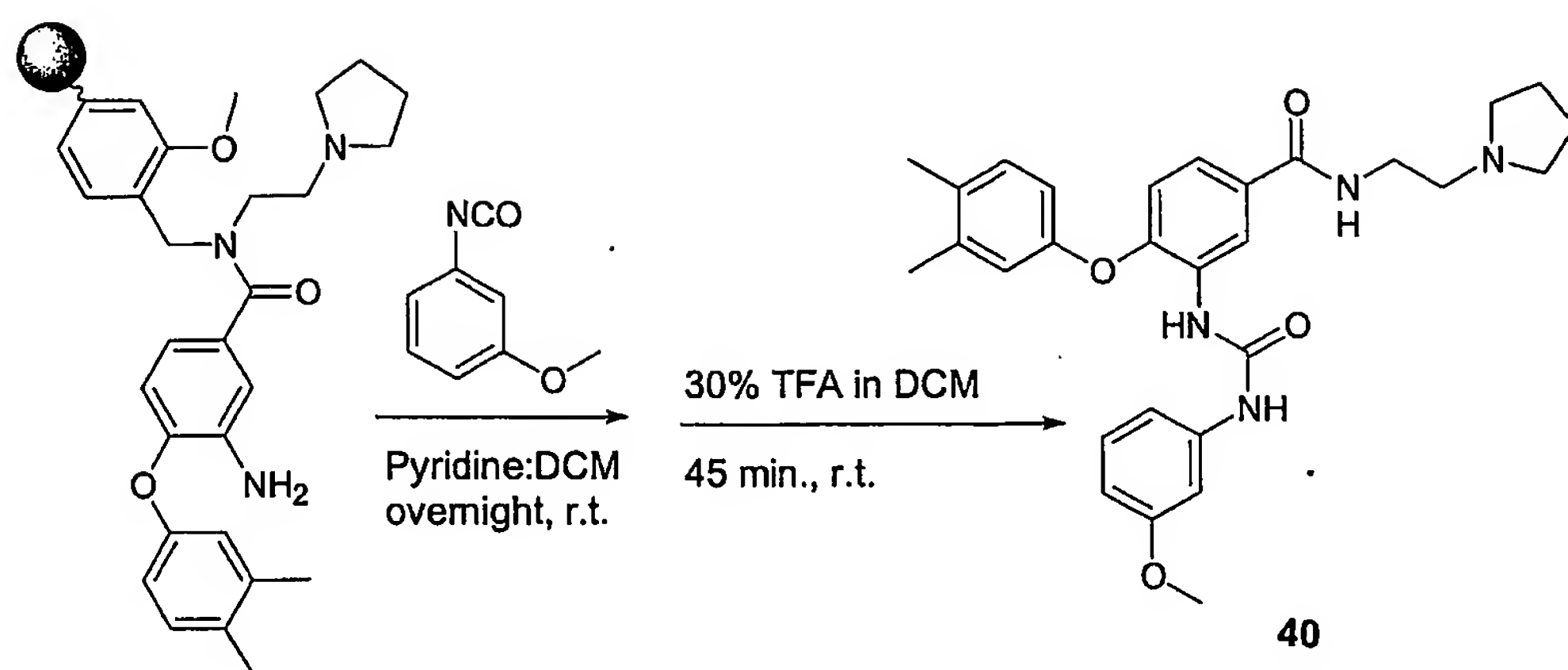
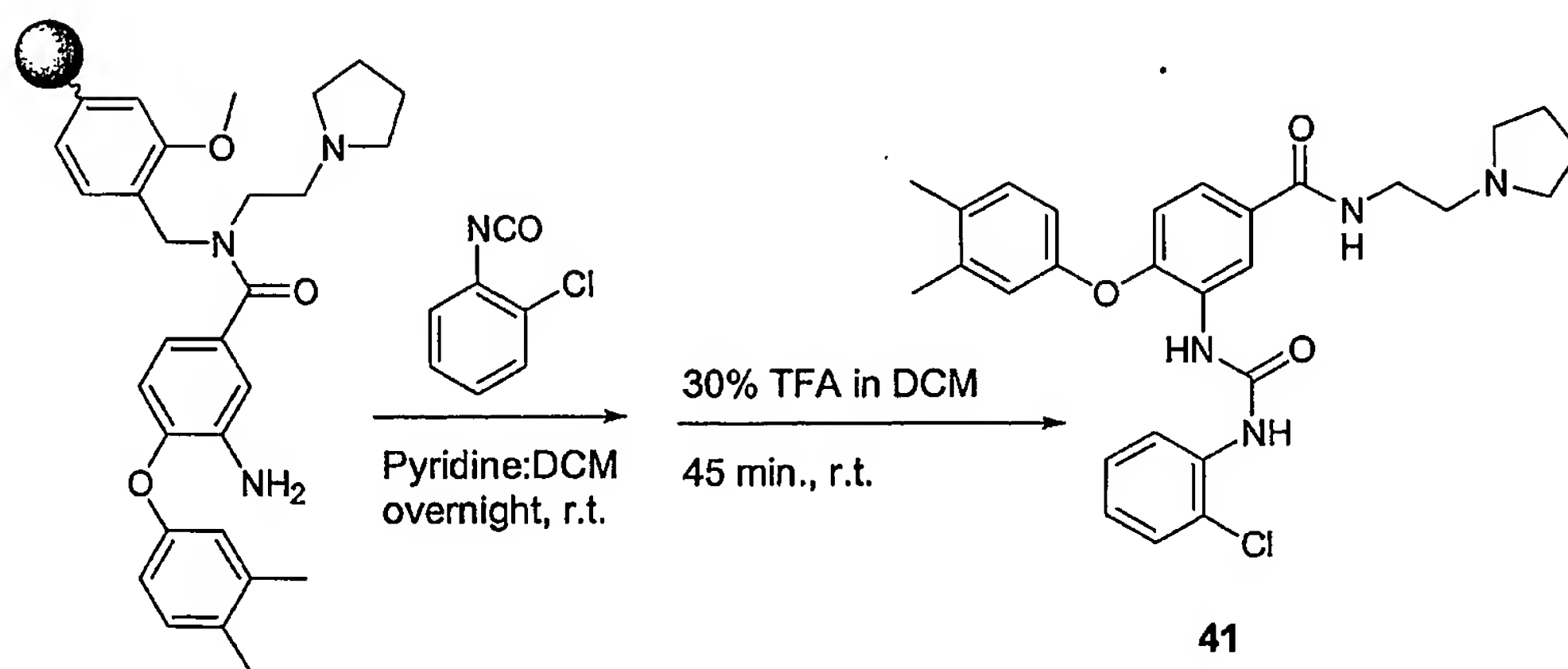
Example 6Example 7

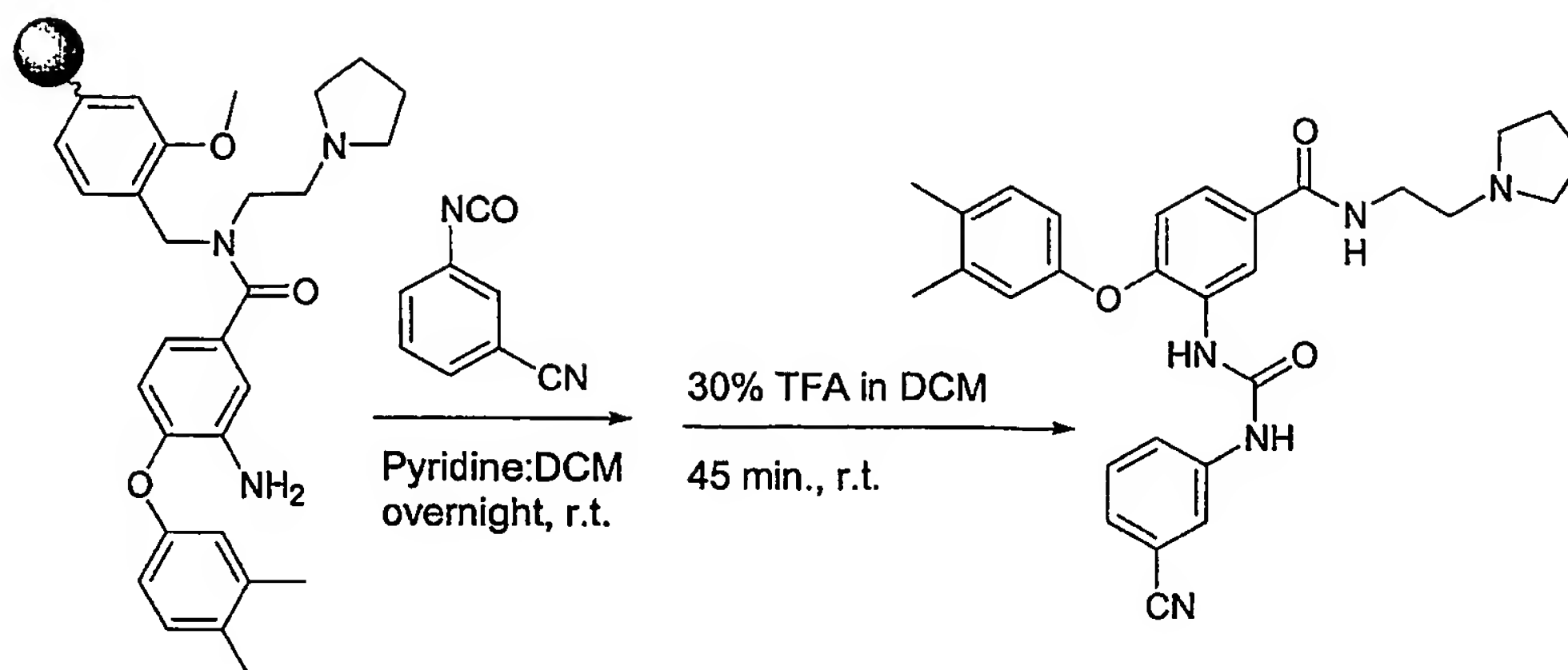
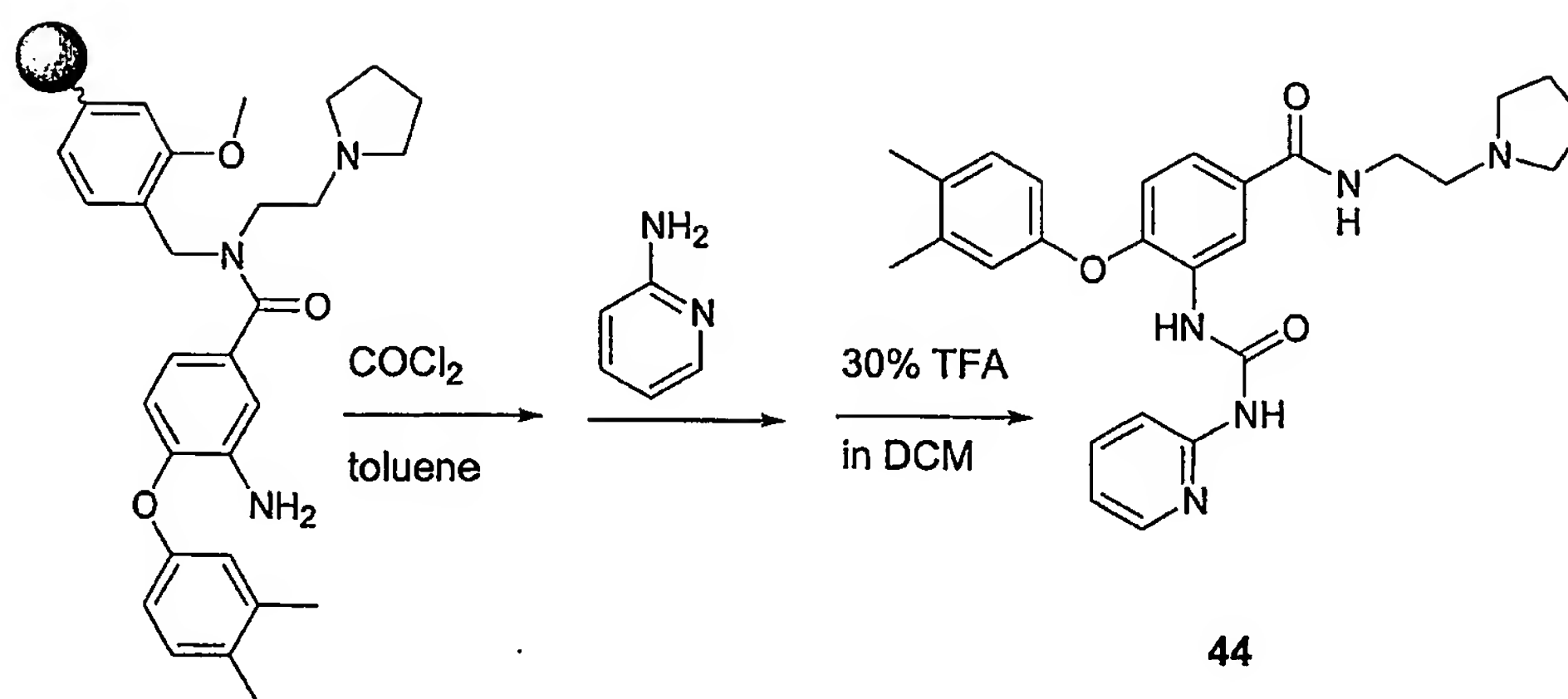
Example 8Example 9

Example 10Example 11



Example 12Example 13

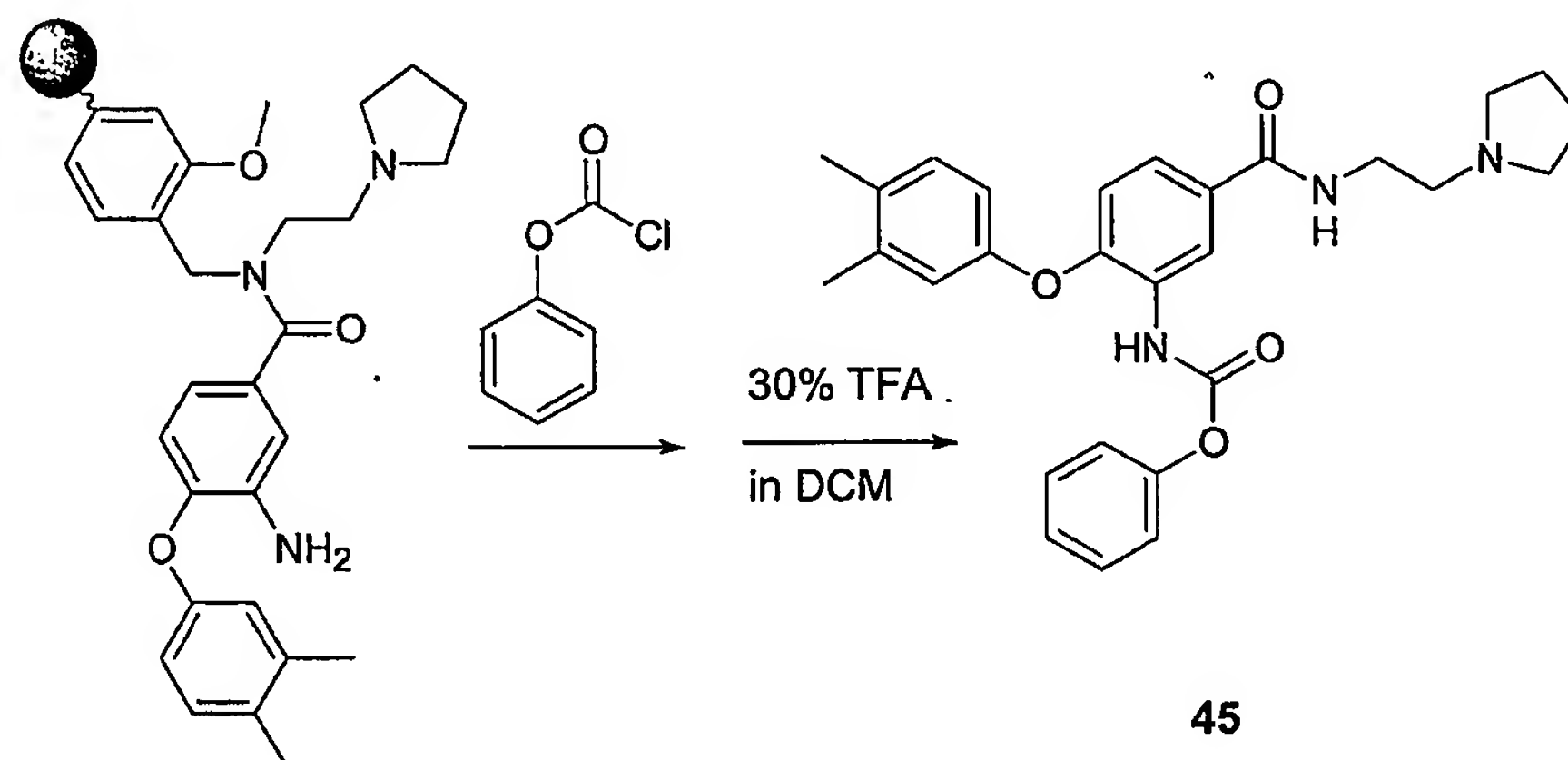
Example 14Example 15

Example 16Example 17

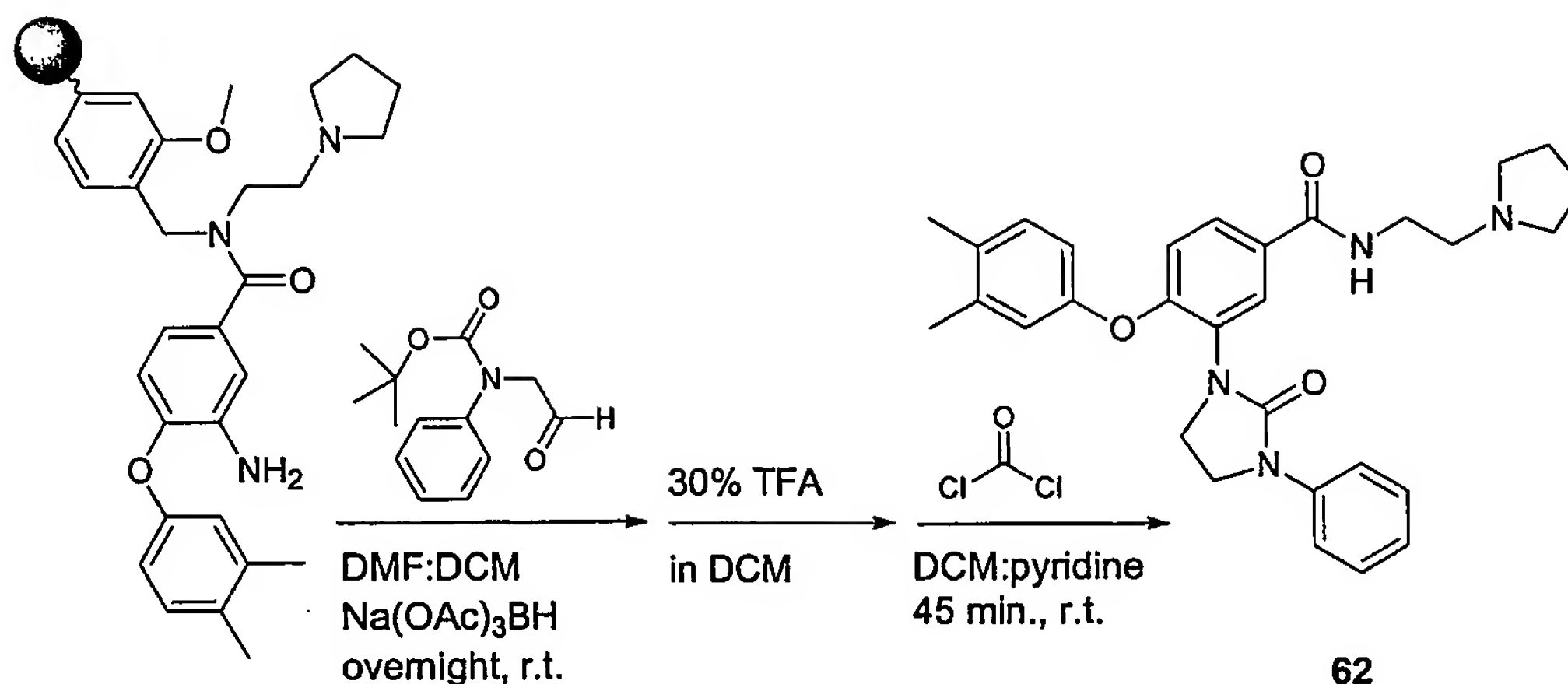
[0478] To a round bottom flask was added resin (500 mg, 0.55 mmol) and DCM (15 mL). The resulting mixture was cooled to -78°C. Then, 20% phosgene in toluene (540 mg) was added dropwise. The resulting mixture was warmed to room temperature and shaken for 3 hours. The resin was filtered and washed with DCM (2x). The resin was transferred to a peptide vessel and excess (10-15 eq) of aminopyridine along with 15 mL of DCM were

added. The resulting mixture was shaken overnight at room temperature. The resin was washed with DCM (2x). Then, 30% TFA in DCM (50 mL) was added and the resulting mixture was shaken for 45 min. at room temperature. The resin was filtered and washed with DCM (2x). The filtrate was concentrated to afford 44.

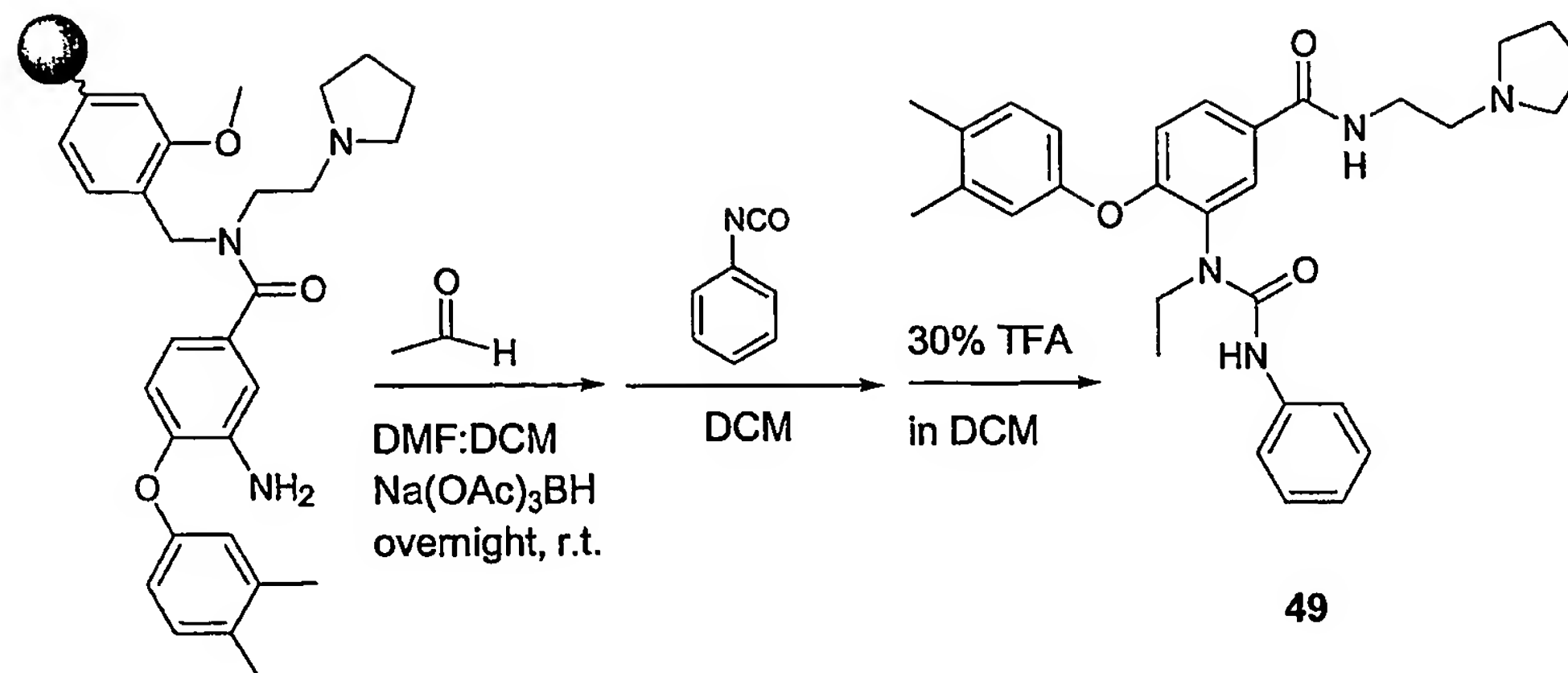
Example 18



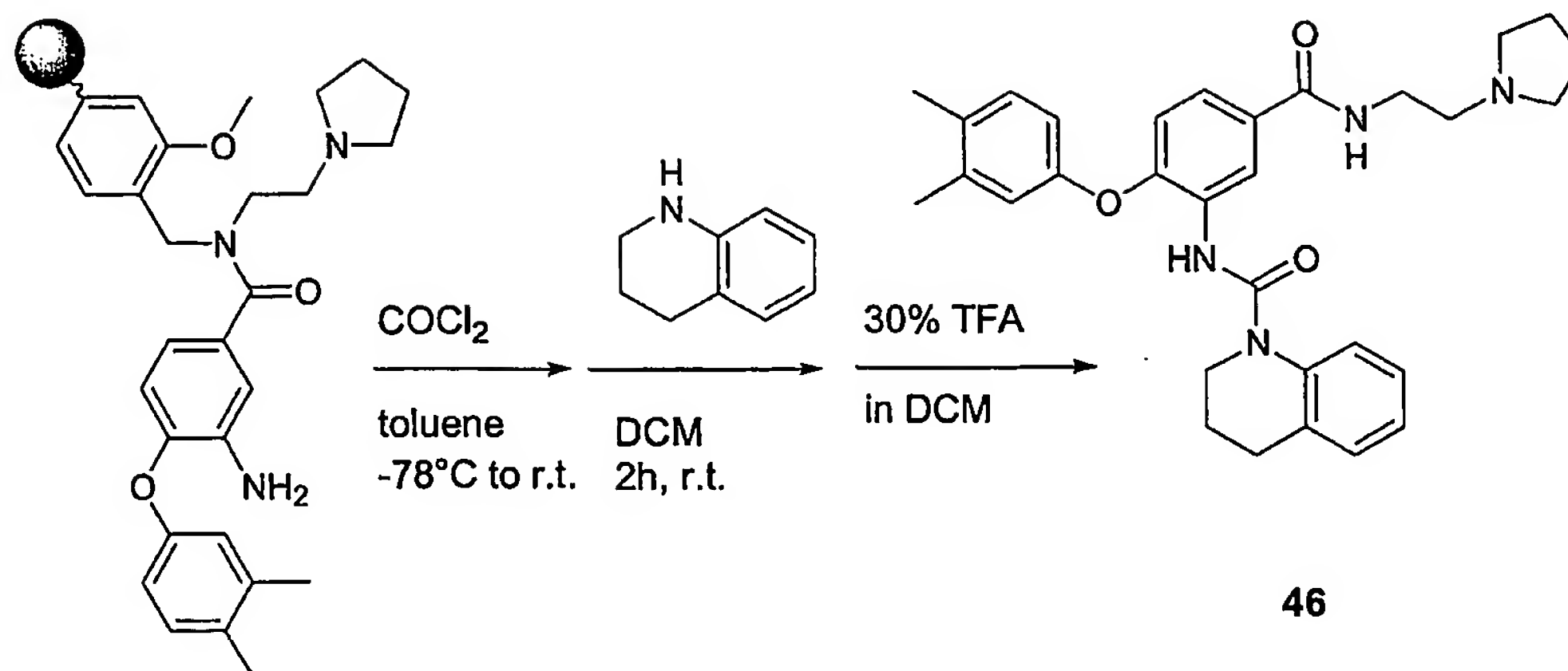
[0479] To a peptide vessel was added resin (1.1 mmol/g, 200 mg, 0.22 mmol), phenylchloroformate (143  $\mu$ L, 1.1 mmol), and DCM:pyridine (7 mL, 1:1 ratio). The resulting mixture was shaken overnight at room temperature. The resin was washed with DCM (2x). Then, 30% TFA in DCM (50 mL) was added and the resulting mixture was shaken for 45 min. at room temperature. The resin was filtered and washed with DCM (2x). The filtrate was concentrated to afford 45.

Example 19

[0480] To a peptide vessel was added resin (1.1 mmol/g, 1.1 g, 1.21 mmol), 1,1-dimethylethyl 2-oxoethyl(phenyl)carbamate (490 mg, 3.63 mmol), and DCM:DMF (10 mL, 1:1 ratio). The mixture was shaken for 30 min. at room temperature. Then, Na(OAc)<sub>3</sub>BH (1.27 g, 6.05 mmol) was added and the mixture was shaken overnight at room temperature. The mixture was degassed every half hour for the first 3 hours. The resin was washed with MeOH (2x) and DCM (2x). Then, 30%TFA in DCM (50 mL) was added and resulting mixture was shaken for 45 min. at room temperature. The resin was filtered and washed with DCM (2x). The filtrate was concentrated and dried. Then, phosgene (27.1  $\mu$ L, 0.274 mmol) and DCM:pyridine (5 mL, 1:1 ratio) were added to the crude mixture. The resulting mixture was stirred at room temperature for 45 min. The mixture was concentrated and purified by column chromatography to afford 62.

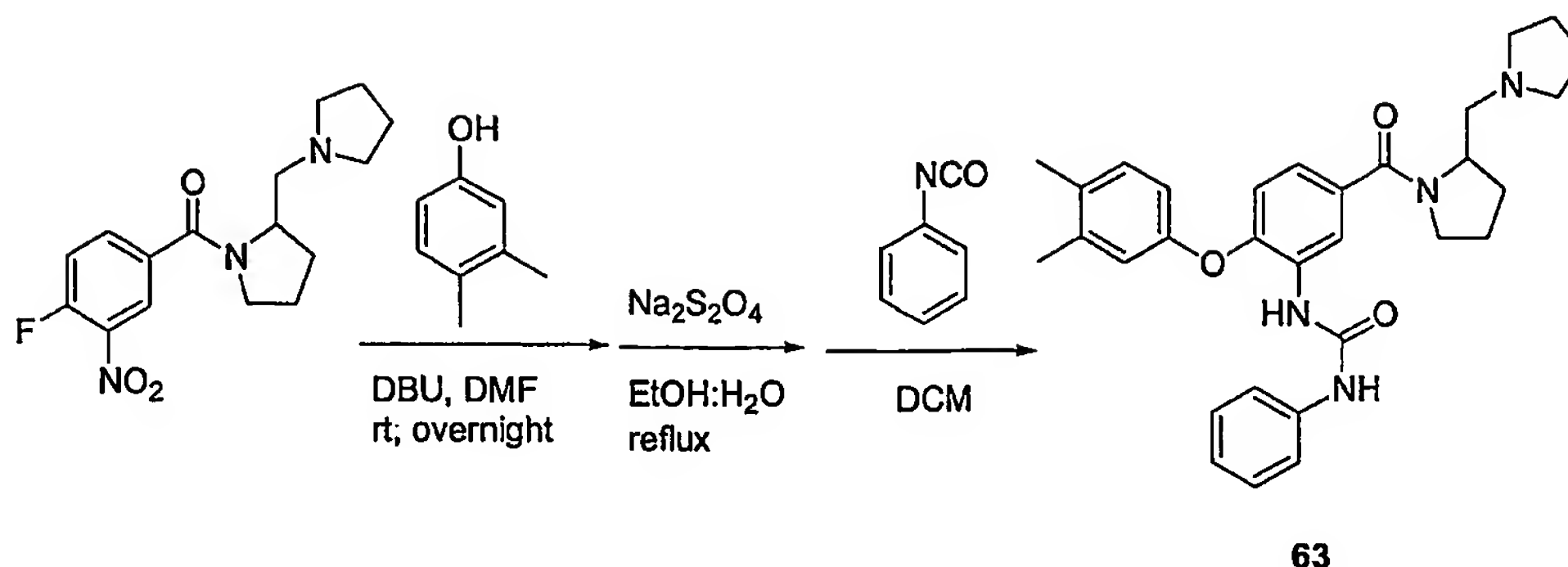
Example 20

[0481] To a peptide vessel was added resin (1.1 mmol/g, 500 mg, 0.55 mmol), acetaldehyde (93  $\mu$ L, 1.65 mmol), and DCM:DMF (8 mL, 1:1 ratio). The mixture was shaken for 30 min. at room temperature. Then, Na(OAc)<sub>3</sub>BH (580 mg, 2.75 mmol) was added and the mixture was shaken overnight at room temperature. The mixture was degassed every half hour for the first three hours. The resin was washed with MeOH (2x) and DCM (2x). Then, isocyanatobenzene (327  $\mu$ L, 2.75 mmol) and DCM (10 mL) were added to the resin in the peptide vessel. The resulting mixture was shaken overnight at room temperature. The resin was washed with DCM (2x). Then, 30% TFA in DCM (50 mL) was added and resulting mixture was shaken for 45 min. at room temperature. The resin was filtered and washed with DCM (2x). The filtrate was concentrated to afford 49.

Example 21

[0482] To a round bottom flask was added resin (1.1 mmol/g, 400 mg, 0.44 mmol) and DCM (7 mL). The resulting mixture was stirred at  $-78^{\circ}\text{C}$  and phosgene (217 mg, 2.2 mmol) was added dropwise. The mixture was warmed up to room temperature and shaken for 3 hours. The resin was washed with DCM (2x) and transferred to a peptide vessel. Then, 1,2,3,4-tetrahydroquinoline (585  $\mu\text{L}$ , 4.4 mmol) was added to the vessel. The resulting mixture was shaken for 2 hours. The resin was washed with DCM (2x). Then, 30% TFA in DCM (30 mL) was added and resulting mixture was shaken for 45 min. at room temperature. The resin was filtered and washed with DCM (2x). The filtrate was concentrated to afford 46.



Example 22

[0483] To a 20 ml vial was added 1-((4-fluoro-3-nitrophenyl)carbonyl)-2-(1-pyrrolidinylmethyl)pyrrolidine (520 mg, 1.62 mmol), 3,4-dimethylphenol (237 mg, 1.94 mmol), DBU (271  $\mu$ L, 1.78 mmol), and DMF (10 mL). The resulting mixture was stirred overnight at room temperature. The mixture was extracted with H<sub>2</sub>O and EtOAc. The organic layers were combined, dried with MgSO<sub>4</sub>, and concentrated to give a crude intermediate. The intermediate was purified by column chromatography to give a pure intermediate. Then, EtOH:H<sub>2</sub>O (3:1) and Na<sub>2</sub>S<sub>2</sub>O<sub>4</sub> (10 eq) were added to the intermediate. The resulting mixture was refluxed overnight. Then, the mixture was cooled to room temperature and extracted with H<sub>2</sub>O and EtOAc. The organic layers were combined, dried with MgSO<sub>4</sub>, and concentrated to give a crude intermediate. The crude intermediate was purified by column chromatography to give a pure intermediate. The purified intermediate was placed in a round bottom flask and DCM and phenylisocyanate (1 eq) were added. The resulting mixture was stirred at room temperature for 1 hour. The solvent was removed and the crude desired product was purified by column chromatography to afford **63**.

Example 23Functional Assay

[0484] Human embryonic kidney cells (293 total) expressing either human, rat, or mouse MCH receptor were harvested from 150 mm culture dishes using PBS. Spinning at 1500 rpm for 2 minutes

initially pelleted cells. The resulting pellet was then homogenized in 15 mL ice cold sucrose buffer (25 mM HEPES, 0.3 M sucrose, pH 7.4) with a motorized, glass fitted, Teflon® homogenizer. The homogenate was centrifuged at 48,000 X g at 4°C for 10 minutes, resuspended in 15 mL assay buffer (25 mM HEPES, 10 mM MgCl<sub>2</sub>, 0.2% BSA, 0.1 mg/mL STI, 0.1 mg/mL Pefabloc®, 1 µM Phosphoramidon, pH 7.4) with a Tissue-Tearor® (Biospec Products) and centrifuged again at 48,000 X g for 10 minutes. The pellet was homogenized for a third time in 15 mL assay buffer using the Tissue-Tearor® and again centrifuged at 48,000 X g for 10 minutes. The resulting pellet was resuspended in assay buffer at a wet weight concentration of 10-20 mg/mL.

[0485] Pharmacological analyses were conducted using either a HT-PS100 device (Axiom Biotechnologies, San Diego, CA), which provides high-resolution dose-response fluorometric measurements of [Ca<sup>2+</sup>]<sub>i</sub> mobilization, or using a FLIPR® device (Molecular Devices, Sunnyvale, CA).

#### HT-PS100 Protocol:

[0486] Materials: HEK 293 cells were stably transfected with the rat MCH 1 receptor and maintained under G418 antibiotic pressure. HT-PS100 assay buffer consisted of Physiological Saline Solution (145 mM NaCl, 5.4 mM KCL, 1.0 mM NaH<sub>2</sub>PO<sub>4</sub>, 1.8 mM CaCl<sub>2</sub>, 0.8 mM MgSO<sub>4</sub>, 15.0 mM HEPES, pH 7.4, 11.2 mM glucose) + 50 µM Pluronic-F127. MCH peptide (Amgen, Inc.) was reconstituted in assay buffer and served as the positive agonist control for all experiments. Test compounds were prepared as 10 mM stocks in 100% DMSO and diluted to a top end working concentration of 100 µM in 96 well plates.

[0487] Methods: HEK 293 stably expressing MCH1R were maintained in Dulbecco's modified Eagle's medium (GIBCO/Life Technologies, Rockville, MD) supplemented with 2 mM glutamine and 10% dialyzed fetal bovine serum (HyClone, Logan, UT) at 37°C, 5% CO<sub>2</sub>. Cells were harvested by 10' treatment with Versene

(GIBCO/Life Technologies) followed by trituration, washing twice with cold (4°C) hybridoma medium (Serum/Protein free, with L-glutamine, sodium bicarbonate, MOPS buffer) (Sigma-Aldrich Corp, St. Louis, MO) and resuspended at  $2 \times 10^6$  cells/mL in the same medium. The resuspended cells were loaded with the fluorescent calcium indicator Fura-2 by incubating with Fura-2AM (Molecular Probes, Eugene, OR) at  $1.6 \mu\text{M}$  for 60' at room temperature. The loaded cells were then washed twice with hybridoma medium, adjusted to  $2 \times 10^5$  cells/mL and kept at ambient temperature in a spinner flask under gentle stirring for up to 6 hours during the experiment.

[0488] Receptor-stimulated intracellular calcium responses were detected in the flow-through detector cuvette of the HT-PS100 by monitoring increases in the ratio of Fura-2 fluorescence intensities R340/380 measured at alternating 340/380 nm excitation and 510 nm emission.

[0489] Preliminary static experiments, conducted to determine the kinetics of MCH1R's dose response to MCH peptide, indicated the optimum time point to capture the maximum  $\text{Ca}^{++}$  transients was 30 s. No interference with DMSO was seen up to 1%. Based on these observations, subsequent experiments were conducted on the HT-PS100 to generate high resolution dose response curves, characterize agonist/antagonist properties, and evaluate antagonist potencies via Schild experiments. During HT-PS100 validation, reproducible  $\text{EC}_{50}$ s for MCH of 10 nM were generated within a broad range of cell passage and harvest density. HT-PS100 gradient generation was calibrated with a standardized stock of fluorescein.

[0490] Test compounds were screened for MCH1R activity in the HT-PS100 for both agonist and antagonist action. Agonist mode challenges were conducted at a maximum gradient concentration of  $100 \mu\text{M}$ . Antagonist activity was tested by 30 s pre-incubation of cells at a compound concentration of  $100 \mu\text{M}$ , with subsequent introduction of MCH at a concentration 5-fold of

EC<sub>50</sub> as determined in preliminary experiments. Compounds that showed inhibition of the MCH-induced Ca<sup>++</sup> response were automatically tagged for re-interrogation, IC<sub>50</sub> generation, and Schild analysis.

[0491] Schild experiments were conducted on the HT-PS100 for selected compounds by 30 s pre-incubation of cells with antagonist compounds prior to administering MCH peptide. Several fixed concentrations of antagonist compounds were prepared in 10-fold increments, and presented to the cells 30 s before introducing a gradient of increasing MCH concentration. Values for compound pA2 were calculated by linear regression of Log(DR - 1) MCH EC<sub>50</sub> as a function of Log(antagonist concentration), where DR is the dose ratio of MCH EC<sub>50</sub> values determined in the presence and absence of antagonist.

[0492] The following compounds had K<sub>i</sub> values of 100 μM or less in the HT-PS100 assay: Compound Nos. . Of these, Compound Nos. had K<sub>i</sub> values of 100 nM or less in this assay.

FLIPR® protocol:

[0493] Materials: Pharmacological analysis was conducted using a FLIPR® device (Molecular Devices, Sunnyvale, CA). CHOK1-Gqi cells were stably transfected with the rat MCH1 receptor and maintained under G418 antibiotic pressure. FLIPR® assay buffer consisted of phenol red-free DMEM + 2.5 mM probenecid. MCH peptide (Amgen, Inc.) was reconstituted in assay buffer and served as the positive agonist control for all experiments. Test compounds were prepared as 10 mM stocks in 100% DMSO and diluted to a top end working concentration of 10 μM in 96 well black, flat bottom, collagen-I coated plates (Becton Dickinson, Bedford, MA).

[0494] Methods: CHOK1-Gqi cells stably expressing MCH1R were maintained in Dulbecco's modified Eagle's medium (GIBCO/Life Technologies, Rockville, MD) supplemented with 2 mM glutamine and 10% dialyzed fetal bovine serum (HyClone, Logan, UT) at

37°C, 5% CO<sub>2</sub>. Cells were harvested by 10' treatment with Versene (GIBCO/Life Technologies) followed by trituration, washing twice with cold (4°C) hybridoma medium (Serum/Protein free, with L-glutamine, sodium bicarbonate, MOPS buffer) (Sigma-Aldrich Corp, St. Louis, MO) and replated onto 96 well black, flat bottom, collagen-I coated plates to a density of 10,000 cells/well. The cells were then loaded with the fluorescent calcium indicator Fura-2 (Molecular Probes, Eugene, OR) at 1.6  $\mu$ M for 60' at room temperature. The loaded cells were then washed twice with 90  $\mu$ l/well of wash buffer (1XHBSS, 20 mM HEPES, 2.5 mM probenecid).

[0495] Receptor-stimulated intracellular calcium responses were detected using FLIPR® by monitoring increases in the Fura-2 fluorescence response.

[0496] Test compounds were screened for MCH1R activity in the FLIPR® for both agonist and antagonist action. Agonist mode challenges were conducted at a maximum gradient concentration of 1  $\mu$ M. Antagonist activity was tested by 10 min pre-incubation of cells at a compound concentration of defined to be 300X the EC<sub>50</sub> of MCH (typically 1  $\mu$ M), with subsequent introduction of MCH at a concentration 5-fold of EC<sub>50</sub> as determined in preliminary experiments. Compounds that showed inhibition of MCH induced MCH1R dependant Ca<sup>++</sup> responses were automatically tagged for re-interrogation, IC<sub>50</sub> generation, and Schild analysis.

[0497] Schild experiments were conducted on the FLIPR® for selected compounds by co-administering antagonist compounds together with MCH peptide. Several fixed concentrations of antagonist compounds were prepared in 10-fold increments, and presented to the cells in a gradient of increasing MCH concentration. Values for compound pA2 were calculated by linear regression of MCH EC<sub>50</sub>s as a function of antagonist concentration.

[0498] The following compounds had K<sub>i</sub> values of 100  $\mu$ M or less in the rMCH FLIPR® assay: Compound Nos. 1, 5, 6, 15, 22, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 51, 53, 54, 55,

56, 57, 58, 59, and 64. Of these, Compound Nos. 1, 6, 15, 31, 32, 38, 39, 40, and 41 had  $K_i$  values of 100 nM or less in this assay.

[0499] The following compounds had  $K_i$  values of 100  $\mu$ M or less in the hMCH FLIPR<sup>®</sup> assay: Compound Nos. 1, 5, 6, 34, 35, 36, 37, 38, 40, 41, 51, 52, 53, 54, 55, 56, 57, 58, 59, and 64. Of these, Compound Nos. 1, 6, 34, 35, 38, 40, 41, 51, 56, and 57 had  $K_i$  values of 100 nM or less in this assay.

#### Example 24

##### Ligand Binding Assay

[0500] Binding assays were determined as described below using mouse, rat or human MCH 1 receptors (mMCH1R, rMCH1R, and hMCH1R, respectively) expressed in HEK 293;  $IC_{50}$  values were calculated.

[0501] Binding assays were performed in 96-well U-bottom plates. Membranes (100  $\mu$ g tissue) were incubated at 30°C for 90 minutes in assay buffer with various peptides in the presence of 0.2 nM <sup>125</sup>I native-MCH (Perkin-Elmer Life Sciences, Boston, MA) in 100  $\mu$ L total volume. Non-specific binding was assessed in the presence of 1  $\mu$ M cold native-MCH. The reaction was terminated by rapid filtration through Unifilter-96 GF/C glass fiber filter plates (FilterMate<sup>®</sup> 196 Harvester, Packard Instrument Co., Meriden, CT) pre-soaked in PBS/0.5% BSA, followed by three washes with 300  $\mu$ L ice-cold water. Bound radioactivity was determined using a TopCount<sup>®</sup> microplate scintillation and luminescence counter (Packard Instrument Co., Meriden, CT). Nonlinear regression analyses of drug concentration curves were performed using GraphPad Prism<sup>®</sup> (GraphPad Software, Inc., San Diego, CA).

[0502] The following compounds had  $IC_{50}$  values of 100  $\mu$ M or less in the rMCH assay: Compound Nos. 1, 10, 12, 13, 15, 16, 17, 18, 22, 27, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42,



43, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 63, 64, 65, and 66. Of these, Compound Nos. 1, 31, 38, 39, 40, 41, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, and 66 had IC<sub>50</sub> values of 100 nM or less in the rMCH assay.

[0503] The following compounds had IC<sub>50</sub> values of 100  $\mu$ M or less in the hMCH assay: Compound Nos. 1, 5, 6, 8, 10, 12, 13, 15, 16, 17, 18, 20, 22, 27, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 58, 59, 64, 65, and 66. Of these, Compound Nos. 1, 6, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 58, 59, and 66 had IC<sub>50</sub> values of 100 nM or less in the hMCH assay.

[0504] In view of the above, it will be seen that the several objects of the invention are achieved.

[0505] The above description of the embodiments and examples are intended only to acquaint others skilled in the art with the invention, its principles, and its practical application, so that others skilled in the art may adapt and apply the invention in its numerous forms, as may be best suited to the requirements of a particular use. The present invention, therefore, is not limited to the above embodiments, and may be variously modified.

[0506] With reference to the use of the word(s) "comprise" or "comprises" or "comprising" or "including" or "having" in the above description and/or in the following claims, it should be noted that unless the context requires otherwise, those words are used on the basis and clear understanding that they are to be interpreted inclusively, rather than exclusively, and that each of those words is to be so interpreted in construing the above description and/or the following claims. When introducing elements of the present invention or the preferred embodiment(s) thereof, the articles "a," "an," "the," and "said" are intended to mean that there are one or more of the elements.

[0507] In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

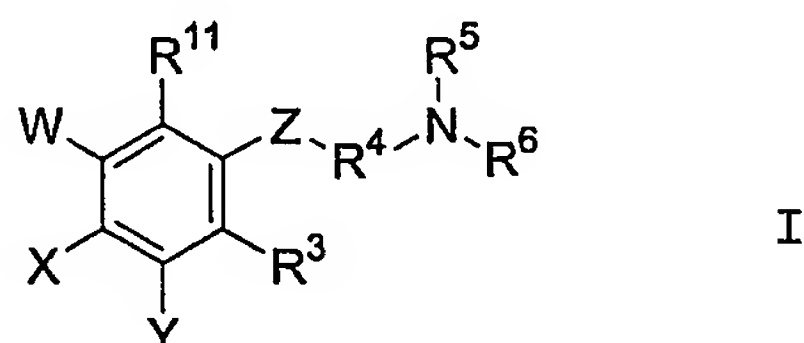


[0508] As various changes could be made in the above compounds and methods without departing from the scope of the invention, it is intended that all matter contained in the above description shall be interpreted as illustrative and not in a limiting sense.

[0509] The entire texts of all U.S. Patents and other references cited herein are hereby incorporated by reference into this patent.

What is claimed is:

1. A compound of Formula I, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof:



wherein:

W is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)-$ ,  $-C(O)N(R^9)-$ , and  $-N(R^{12})C(O)N(R^9)-$ ;

$R^1$  is selected from the group consisting of alkyl, cycloalkyl, cycloalkylalkyl, aryl, aralkyl, heteroaryl, and heteroarylalkyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, arylcycloalkyl, and heteroarylalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>3</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

R<sup>4</sup> is selected from the group consisting of a bond, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and heteroarylalkyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, alkoxycarbonyl, and halo;

R<sup>5</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

R<sup>8</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which

they are attached may form an unsaturated fused heterocyclic ring system;

R<sup>9</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano;

R<sup>11</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano; and

R<sup>12</sup> is selected from the group consisting of hydrogen, hydroxy, alkyl, cycloalkyl, aryl, aralkyl, halo, alkoxy, hydroxyalkyl, alkoxyalkyl, aryloxy, carboxyl, carboxyalkyl, and cyano.

2. The compound, pharmaceutically-acceptable salt or tautomer of claim 1, wherein:

W is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

R<sup>1</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, lower cycloalkylalkyl, aryl, lower aralkyl, heteroaryl, and lower heteroarylalkyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>2</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower

cycloalkylalkyl, lower aralkenyl, lower arylcycloalkyl, and lower heteroarylalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^3$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

$R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, lower alkynyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower heteroarylalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, lower alkoxy carbonyl, and halo;

$R^5$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

R<sup>8</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

R<sup>9</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano;

R<sup>11</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano; and

R<sup>12</sup> is selected from the group consisting of hydrogen, hydroxy, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, halo, lower alkoxy, lower hydroxyalkyl, lower alkoxyalkyl, aryloxy, carboxyl, lower carboxyalkyl, and cyano.

3. The compound, pharmaceutically-acceptable salt or tautomer of claim 2, wherein:

W is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, chloro, bromo, fluoro,

methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

$R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

$R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl,



cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein R<sup>2</sup> or the ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

R<sup>3</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl,

naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

R<sup>4</sup> is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached

may form a pyrrolidinyl or a piperidinyl ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

R<sup>5</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy,

pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

R<sup>8</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl,

naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an isoindolinyl ring;

R<sup>9</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and



cyano, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>10</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

R<sup>11</sup> is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl,

pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano; and

$R^{12}$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano.

4. The compound, pharmaceutically-acceptable salt or tautomer of claim 1, wherein X is  $-OR^1$ .

5. The compound, pharmaceutically-acceptable salt or tautomer of claim 2, wherein X is  $-OR^1$ .

6. The compound, pharmaceutically-acceptable salt or tautomer of claim 3, wherein X is  $-OR^1$ .

7. The compound, pharmaceutically-acceptable salt, tautomer or prodrug of claim 1, selected from the group of compounds consisting of



4-[(3,4-dimethylphenyl)oxy]-3-{[(phenylamino)carbonyl]amino}-N-(2-(1-pyrrolidinyl)ethyl)benzamide,

4-[(3,4-dimethylphenyl)oxy]-3-[(3-phenylpropanoyl)amino]-N-(2-(1-pyrrolidinyl)ethyl)benzamide,

4-[(3,4-dimethylphenyl)oxy]-3-({[(phenylmethyl)amino]carbonyl}amino)-N-(2-(1-pyrrolidinyl)ethyl)benzamide,

4-(phenyloxy)-N-(2-(1-pyrrolidinyl)ethyl)benzamide,

3-acetylamino-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-propionylamino-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-(3-cyclopentylpropionylamino)-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-phenylacetylamino-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-(3-phenyl-acryloylamino)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-[(2-phenyl-cyclopropanecarbonyl)amino]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

naphthalene-2-carboxylic acid [2-(3,4-dimethylphenoxy)-5-(2-pyrrolidin-1-yl-ethylcarbamoyl)phenyl]amide,

4-(3,4-dimethylphenoxy)-3-(3-ethylureido)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

N-(2-aminoethyl)-4-(3,4-dimethylphenoxy)-3-(3-phenylpropionylamino)benzamide,

4-methoxy-3-(3-phenylpropionylamino)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(naphthalen-2-yl-oxy)-3-(3-phenylpropionylamino)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-[3-(2-methoxyphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-[3-(2,4-dichlorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-[3-(4-phenoxyphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-(3-biphenyl-4-yl-ureido)-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-[3-(4-isopropylphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-[3-(2,6-dimethylphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-(3-naphthalen-1-yl-ureido)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-[3-(2,6-diisopropylphenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-[3-(4-bromophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-[3-(3-methoxyphenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-[3-(2-chlorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-(3,3-diphenylureido)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dimethylphenoxy)-3-(3-methyl-3-phenylureido)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

1,3-dihydroisoindole-2-carboxylic acid [2-(3,4-dimethylphenoxy)-5-(2-pyrrolidin-1-yl-ethylcarbamoyl)phenyl]amide,

4-(4-fluoro-3-methylphenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-dichlorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3,4-difluorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(4-fluorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

4-(3-fluorophenoxy)-3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)-4-p-tolyloxybenzamide,

3-[3-(3-fluorophenyl)ureido]-N-(2-pyrrolidin-1-yl-ethyl)-4-m-tolyloxybenzamide,

3-[3-(3,5-difluorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

3-[3-(3,5-dichlorophenyl)ureido]-4-(3,4-dimethylphenoxy)-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

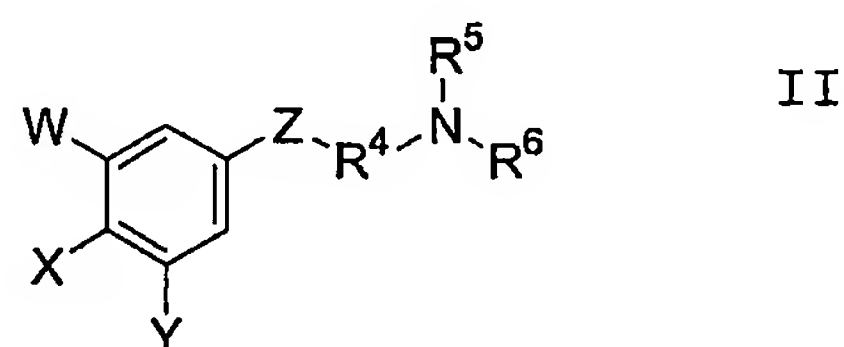
3-[3-(3-fluorophenyl)ureido]-4-phenoxy-N-(2-pyrrolidin-1-yl-ethyl)benzamide,

1-[2-(3,4-dimethylphenoxy)-5-(2-pyrrolidin-1-yl-methylpyrrolidine-1-carbonyl)phenyl]-3-phenylurea,

1-{2-(3,4-dimethylphenoxy)-5-[(2-pyrrolidin-1-yl-ethylamino)-methyl]phenyl}-3-(3-fluorophenyl)urea,

1- [2- (3,4-dimethylphenoxy) -5- (2-pyrrolidin-1-yl-methylpyrrolidine-1-carbonyl)phenyl] -3-phenylurea, and  
4- (3,4-dichlorophenoxy) -3- [3- (3,5-difluorophenyl)ureido] -N- (2-pyrrolidin-1-yl-ethyl)benzamide.

8. A compound of claim 1, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein the compound corresponds to Formula II



wherein:

W is selected from the group consisting of hydrogen, hydroxy, alkyl, and alkoxy;

X is selected from the group consisting of  $-OR^1$ ,  $-NR^1R^{10}$ , and  $-SR^1$ ;

Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-C(O)-$ ,  $-CH_2N(R^9)-$ , and  $-N(R^{12})C(O)N(R^9)-$ ;

$R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally

substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>4</sup> is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

R<sup>5</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, alkyl, and aryl;

R<sup>8</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, wherein R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

R<sup>9</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>10</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl; and

$R^{12}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl.

9. The compound, pharmaceutically-acceptable salt or tautomer of claim 8, wherein:

W is selected from the group consisting of hydrogen, hydroxy, lower alkyl, and lower alkoxy;

$R^1$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

$R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl,

$R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

$R^9$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^{10}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl; and

$R^{12}$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl.

10. The compound, pharmaceutically-acceptable salt or tautomer of claim 9, wherein:

W is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, methoxy, ethoxy, propoxy, butoxy, pentyloxy, and hexyloxy;

$R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole,



tetrazolyl, and benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

$R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein  $R^2$  or the ring formed with  $R^8$  is

optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

$R^3$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

$R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl,

cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

$R^5$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

$R^6$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl,

methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

R<sup>8</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an isoindolinyl ring;

R<sup>9</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl,

propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

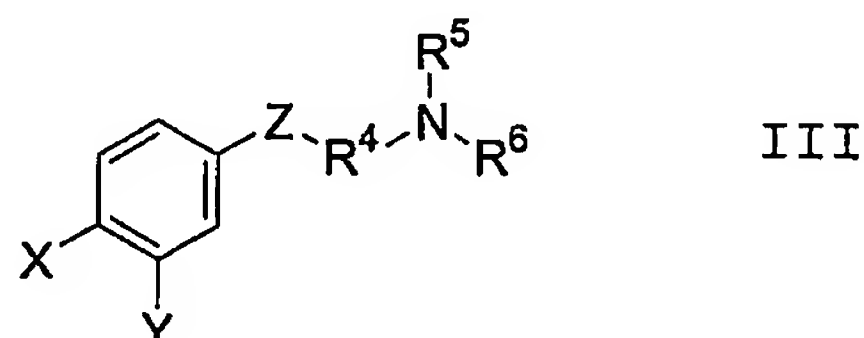
R<sup>10</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl; and

R<sup>12</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl,



pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl

11. A compound of claim 1, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein the compound corresponds to Formula III



wherein:

X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

Y is selected from the group consisting of hydrogen,  $-N(R^7)C(O)NR^2R^8$ ,  $-N(R^7)C(O)OR^2$ ,  $-N(R^7)C(O)R^2$ ,  $-N(R^7)SO_2R^2$ , and  $-NR^2R^7$ ;

Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-CH_2N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

$R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^4$  is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or

6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

$R^5$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^7$  is selected from the group consisting of hydrogen, alkyl, and aryl;

$R^8$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

$R^9$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^{10}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl; and

$R^{12}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl.

12. The compound, pharmaceutically-acceptable salt or tautomer of claim 11, wherein:

$R^1$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is



optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

$R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

$R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$

together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

R<sup>9</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>10</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl; and

R<sup>12</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl.

13. The compound, pharmaceutically-acceptable salt or tautomer of claim 12, wherein:

R<sup>1</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

R<sup>2</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole,

tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

$R^3$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl,

hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

R<sup>4</sup> is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy,

ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

R<sup>5</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

R<sup>8</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl,



triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an isoindolinyl ring;

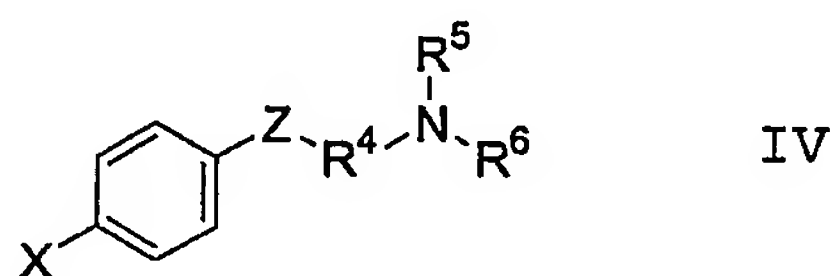
$R^9$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

$R^{10}$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl,

hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl; and

$R^{12}$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl.

14. A compound of claim 1, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein the compound corresponds to Formula IV



wherein:

X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-CH_2N(R^9)-$ , and  $-NHC(O)NR^9-$ ;



R<sup>1</sup> is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>2</sup> is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein R<sup>2</sup> or the unsaturated fused heterocyclic ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>4</sup> is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

R<sup>5</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, alkyl, and aryl,

R<sup>8</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to

which they are attached may form an unsaturated fused heterocyclic ring system;

$R^9$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^{10}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl; and

$R^{12}$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl.

15. The compound, pharmaceutically-acceptable salt or tautomer of claim 14, wherein:

$R^1$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more

substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

R<sup>5</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, lower alkyl, and aryl;

R<sup>8</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, wherein R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system;

R<sup>9</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>10</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl; and

R<sup>12</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl.

16. The compound, pharmaceutically-acceptable salt or tautomer of claim 15, wherein:

$R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

$R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are

attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, chloro, bromo, and fluoro;

$R^3$  is selected from the group consisting of hydrogen, hydroxy, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, chloro, bromo, fluoro, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, carboxyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, carboxyhexyl, and cyano;

$R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl,

cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

$R^5$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl,



or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

R<sup>8</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an isoindolinyl ring;

R<sup>9</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl,



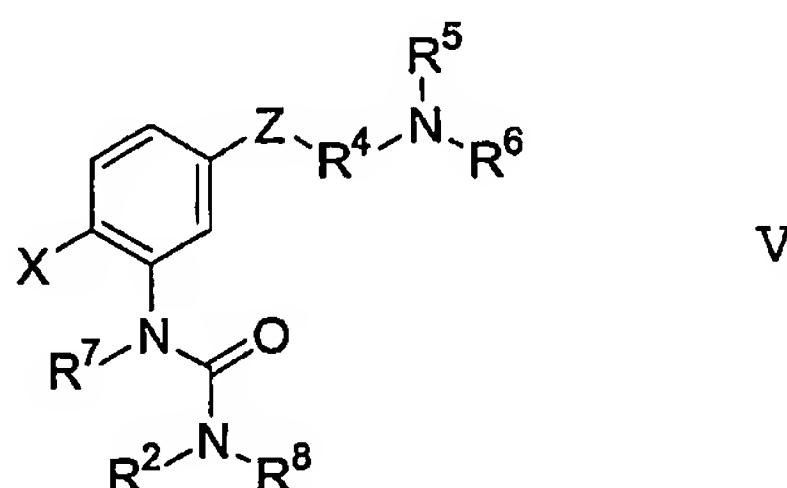
cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>10</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl; and

R<sup>12</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl,

hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl.

17. A compound of claim 1, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein the compound corresponds to Formula V



wherein:

X is selected from the group consisting of  $-OR^1$  and  $-SR^1$ ;

Z is selected from the group consisting of  $-CH=CH-$ ,  $-CH_2N(R^9)-$ ,  $-CH_2N(R^9)-$ , and  $-NHC(O)NR^9-$ ;

$R^1$  is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the

group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>4</sup> is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein R<sup>4</sup> or the ring formed with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

R<sup>5</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, alkyl, and aryl;

R<sup>8</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system; and

R<sup>9</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring.

18. The compound, pharmaceutically-acceptable salt or tautomer of claim 17, wherein:

R<sup>1</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected

from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^2$  is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

$R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

$R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$

together with R<sup>2</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system; and

R<sup>9</sup> is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring.

19. The compound, pharmaceutically-acceptable salt or tautomer of claim 18, wherein:

R<sup>1</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

R<sup>2</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl,

cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl, dihydroindolyl, indolinyl, octahydroquinolinyl, hexahydroquinolinyl, tetrahydroquinolinyl, dihydroquinolinyl, and quinolinyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

$R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl,



cyclobutylpennyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenylyloxy, oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

$R^5$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

$R^6$  is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl,



pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypropyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

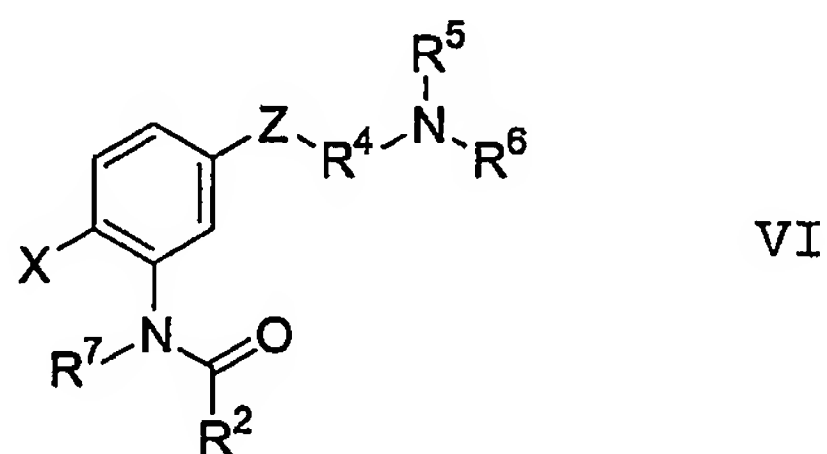
R<sup>7</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

R<sup>8</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypropyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an isoindolinyl ring; and

R<sup>9</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl,

pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyll or a piperidinyll ring.

20. A compound of claim 1, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein the compound corresponds to Formula VI



wherein:

X is selected from the group consisting of -OR<sup>1</sup> and -SR<sup>1</sup>;

Z is selected from the group consisting of -CH=CH-, -CH<sub>2</sub>N(R<sup>9</sup>)-, -CH<sub>2</sub>N(R<sup>9</sup>)-, and -NHC(O)NR<sup>9</sup>-;

R<sup>1</sup> is selected from the group consisting of alkyl, cycloalkyl, aryl, and heteroaryl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>2</sup> is selected from the group consisting of alkyl, cycloalkyl, aryl, heteroaryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein R<sup>2</sup> or the unsaturated fused heterocyclic ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>4</sup> is selected from the group consisting of a bond, alkyl, alkenyl, and cycloalkyl, or R<sup>4</sup> together with R<sup>9</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein R<sup>4</sup> or the ring formed

with R<sup>9</sup> is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, and halo;

R<sup>5</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, and alkoxyalkyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, alkyl, and aryl; and

R<sup>9</sup> is selected from the group consisting of hydrogen, alkyl, cycloalkyl, aryl, aralkyl, hydroxyalkyl, alkoxyalkyl, and carboxyalkyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring.

21. The compound, pharmaceutically-acceptable salt or tautomer of claim 20, wherein:

R<sup>1</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, and heteroaryl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

R<sup>2</sup> is selected from the group consisting of lower alkyl, lower cycloalkyl, aryl, heteroaryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein R<sup>2</sup> or the unsaturated fused heterocyclic ring formed with R<sup>8</sup> is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, carboxyl, aryloxy, oxo, and halo;

$R^4$  is selected from the group consisting of a bond, lower alkyl, lower alkenyl, and lower cycloalkyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, and halo;

$R^5$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, and lower alkoxyalkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^7$  is selected from the group consisting of hydrogen, lower alkyl, and aryl;

$R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system; and

$R^9$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, aryl, lower aralkyl, lower hydroxyalkyl, lower alkoxyalkyl, and lower carboxyalkyl, or  $R^9$  together with  $R^4$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring.

22. The compound, pharmaceutically-acceptable salt or tautomer of claim 21, wherein:

$R^1$  is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl,

biphenyl, benzyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, and benzodioxolyl, wherein R<sup>1</sup> is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

R<sup>2</sup> is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, phenylcyclopropyl, phenylcyclobutyl, phenylcyclopentyl, phenylcyclohexyl, biphenylcyclopropyl, biphenylcyclobutyl, biphenylcyclopentyl, biphenylcyclohexyl, naphthylcyclopropyl, naphthylcyclobutyl, naphthylcyclopentyl, naphthylcyclohexyl, or R<sup>2</sup> together with R<sup>8</sup> and the nitrogen to which they are attached may form a ring selected from the group consisting of hexahydroisoindolyl, tetrahydroisoindolyl, dihydroisoindolyl, isoindolinyl, hexahydroindolyl, tetrahydroindolyl,

dihydroindolyl, indolyl, octahydroquinolyl, hexahydroquinolyl, tetrahydroquinolyl, dihydroquinolyl, and quinolyl, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy, oxo, chloro, bromo, and fluoro;

$R^4$  is selected from the group consisting of a bond, methyl, ethyl, propyl, butyl, pentyl, hexyl, ethenyl, propenyl, allyl, butenyl, pentenyl, acetylenyl, propynyl, butynyl, pentynyl, hexynyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, furyl, thienyl, pyrrolyl, pyrazolyl, imidazolyl, triazolyl, isoxazolyl, oxazolyl, indolyl, thiazolyl, isothiazolyl, oxadiazolyl, oxatriazolyl, dioxazole, tetrazolyl, benzodioxolyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, cyclopropylmethyl, cyclopropylethyl, cyclopropylpropyl, cyclopropylbutyl, cyclopropylpentyl, cyclobutylmethyl, cyclobutylethyl, cyclobutylpropyl, cyclobutylbutyl, cyclobutylpenyl, cyclopentylmethyl, cyclopentylethyl, cyclopentylpropyl, cyclopentylbutyl, cyclopentylpentyl, cyclohexylmethyl, cyclohexylethyl, cyclohexylpropyl, cyclohexylbutyl, cyclohexylpentyl, phenylethenyl, phenylpropenyl, phenylallyl, phenylbutenyl, phenylpentenyl, or  $R^4$  together with  $R^9$  and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring, wherein  $R^4$  or the ring formed with  $R^9$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl, hexyl, hydroxy, methoxy, ethoxy, propoxy, butoxy, pentyloxy, hexyloxy, carboxyl, phenoxy, naphthyloxy, tetrahydronaphthyloxy, biphenyloxy,



oxo, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, butoxycarbonyl, pentyloxycarbonyl, hexyloxycarbonyl, chloro, bromo, and fluoro;

R<sup>5</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>5</sup> together with R<sup>6</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>6</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, and pentoxypentyl, or R<sup>6</sup> together with R<sup>5</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring;

R<sup>7</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, phenyl, naphthyl, tetrahydronaphthyl, and biphenyl;

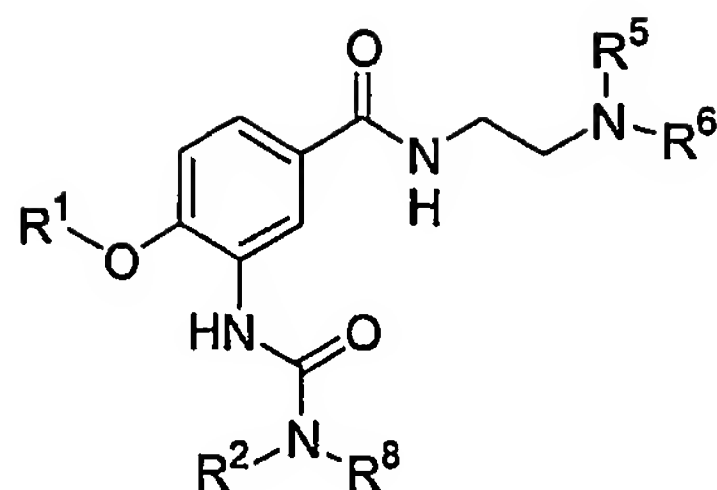
R<sup>8</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl,



hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>8</sup> together with R<sup>2</sup> and the nitrogen to which they are attached may form an isoindolinyl ring; and

R<sup>9</sup> is selected from the group consisting of hydrogen, methyl, ethyl, propyl, butyl, pentyl, hexyl, cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl, benzyl, diphenylmethyl, triphenylmethyl, phenylethyl, diphenylethyl, hydroxymethyl, hydroxyethyl, hydroxypropyl, hydroxybutyl, hydroxypentyl, hydroxyhexyl, methoxymethyl, methoxyethyl, methoxypropyl, methoxybutyl, methoxypentyl, ethoxymethyl, ethoxyethyl, ethoxypropyl, ethoxybutyl, ethoxypentyl, propoxymethyl, propoxyethyl, propoxypropyl, propoxybutyl, propoxypentyl, butoxymethyl, butoxyethyl, butoxypropyl, butoxybutyl, butoxypentyl, pentoxymethyl, pentoxyethyl, pentoxypropyl, pentoxybutyl, pentoxypentyl, carboxymethyl, carboxyethyl, carboxypropyl, carboxybutyl, carboxypentyl, and carboxyhexyl, or R<sup>9</sup> together with R<sup>4</sup> and the nitrogen to which they are attached may form a pyrrolidinyl or a piperidinyl ring.

23. A compound of claim 1, or a pharmaceutically-acceptable salt, tautomer or prodrug thereof, wherein the compound corresponds to Formula VII



VII

wherein:

$R^1$  is selected from the group consisting of cycloalkyl and aryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, and halo;

$R^2$  is selected from the group consisting of alkyl, aryl, aralkyl, cycloalkylalkyl, aralkenyl, and arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of alkyl, hydroxy, alkoxy, aryloxy, and halo;

$R^5$  is selected from the group consisting of hydrogen and alkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen and alkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring; and

$R^8$  is selected from the group consisting of hydrogen, alkyl, cycloalkyl, and aryl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system.

24. The compound, pharmaceutically-acceptable salt or tautomer of claim 23, wherein:

$R^1$  is selected from the group consisting of lower cycloalkyl and aryl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, and halo;

$R^2$  is selected from the group consisting of lower alkyl, aryl, lower aralkyl, lower cycloalkylalkyl, lower aralkenyl, and lower arylcycloalkyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system, wherein  $R^2$  or the unsaturated fused heterocyclic ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of lower alkyl, hydroxy, lower alkoxy, aryloxy, and halo;

$R^5$  is selected from the group consisting of hydrogen and lower alkyl, or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring;

$R^6$  is selected from the group consisting of hydrogen and lower alkyl, or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached may form a saturated 5- or 6-membered heterocyclic ring; and

$R^8$  is selected from the group consisting of hydrogen, lower alkyl, lower cycloalkyl, and aryl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form an unsaturated fused heterocyclic ring system.

25. The compound, pharmaceutically-acceptable salt or tautomer of claim 24, wherein:

$R^1$  is selected from the group consisting of cyclopentyl, cyclohexyl, phenyl, naphthyl, and biphenyl, wherein  $R^1$  is optionally substituted with one or more substituents selected from the group consisting of methyl, ethyl, propyl, hydroxy, methoxy, ethoxy, propoxy, chloro, bromo, and fluoro;

$R^2$  is selected from the group consisting of methyl, ethyl, propyl, butyl, phenyl, naphthyl, tetrahydronaphthyl, biphenyl,



$R^2$  is selected from the group consisting of methyl, ethyl, phenyl, naphthyl, biphenyl, benzyl, phenylethyl, cyclopentylethyl, phenylethenyl, phenylcyclopropyl, or  $R^2$  together with  $R^8$  and the nitrogen to which they are attached may form a dihydroisoindolyl ring, wherein  $R^2$  or the ring formed with  $R^8$  is optionally substituted with one or more substituents selected from the group consisting of methyl, propyl, methoxy, phenoxy, chloro, bromo, and fluoro;

$R^5$  is hydrogen or  $R^5$  together with  $R^6$  and the nitrogen to which they are attached form a pyrrolidinyl ring;

$R^6$  is hydrogen or  $R^6$  together with  $R^5$  and the nitrogen to which they are attached form a pyrrolidinyl ring; and

$R^8$  is selected from the group consisting of hydrogen, methyl, and phenyl, or  $R^8$  together with  $R^2$  and the nitrogen to which they are attached may form a dihydroisoindolyl ring.

27. A pharmaceutical composition comprising a compound, pharmaceutically-acceptable salt, tautomer or prodrug according to any one of claims 1-26, and a pharmaceutically acceptable carrier, adjuvant, or diluent.

28. A method of treating or preventing a melanin concentrating hormone-mediated disorder in a subject, the method comprising administering to a subject in need of such treatment or prevention a compound, pharmaceutically-acceptable salt, tautomer or prodrug according to any one of claims 1-26, or the pharmaceutical composition of claim 27.

29. A method of treating or preventing a condition selected from the group consisting of feeding disorders, sexual disorders, reproductive disorders, depression, anxiety, epileptic seizure, hypertension, cerebral hemorrhage, congestive heart failure, and sleep disturbances, comprising administering to a subject in need of such treatment or prevention a compound, pharmaceutically-acceptable salt,

tautomer or prodrug according to any one of claims 1-26, or the pharmaceutical composition of claim 27.

30. The method of claim 29 wherein the condition being treated or prevented is a feeding disorder.

31. The method of claim 30 wherein the feeding disorder is selected from the group consisting of obesity, bulimia and bulimia nervosa.

32. The method of treating or preventing obesity, comprising administering to a subject in need of such treatment or prevention the compound, pharmaceutically-acceptable salt, tautomer or prodrug of any of claims 1-26.

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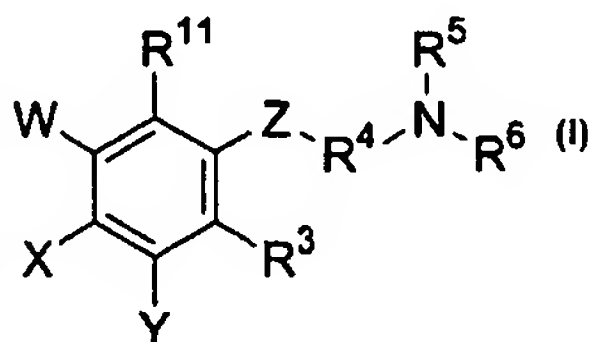
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(54) Title: MELANIN CONCENTRATING HORMONE RECEPTOR ANTAGONISTS



(57) Abstract: Novel compounds, or pharmaceutically-acceptable salts, tautomers or pro-drugs thereof, of Formula (I) (I) wherein W, X, Y, Z, R<sup>3</sup>-R<sup>6</sup>, and R<sup>11</sup> are as defined in the specification, are provided. Also provided are methods of treating or preventing a melanin concentrating hormone-mediated disorder in a subject, comprising administering to a subject in need of such treatment or prevention a compound of Formula I.

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# INTERNATIONAL SEARCH REPORT

International application No.

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07D 207/06; A61K 31/40

US CL : 548/567; 514/428

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

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## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EDWARDS, P.D. Discovery and Biological Activity of Orally Active Peptidyl Trifluoromethyl Ketone Inhibitors of Human Neutrophil Elastase Journal of Medicinal Chemistry (1997), Vol. 40, No. 12, pages 1876-1885 (especially Tables 1, 2, and 3).	1-32
A	EP 0 127 124 (USV PHARMACEUTICAL CORPORATION) 05 December 1984 (05.12.1984), page 1, line 5.	1-32

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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